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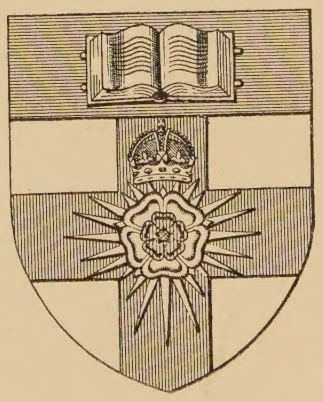

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PUNIC ROCK-TOMBS NEAR PAWLA, MALTA

DURING the winter of 1948–9, in the course of work undertaken to widen the Tal Liedna and the Ghajn Dwieli Roads, which from Pawla lead to Zabbar and to Cospicua respectively, thirteen rock-cut tombs were discovered (Fig. 1). These operations necessitated the complete clearing away of a layer of field soil, varying in thickness from one to three feet, to expose the surface of the underlying Globigerina Limestone formation. Blasting of the rock was also effected to attain the required level.

The discovery of rock-cut tombs in Malta is not of rare occurrence; but in the majority of cases they are found opened and rifled of all the material originally contained in them. The particular interest attached to the burials under consideration is that, when found, almost all of them were still intact and in a comparatively good state of preservation.

In structure these tombs consisted essentially of a vertical shaft giving access, through a rectangular entrance, to a laterally situated burial chamber. In one of the tombs the shaft served two burial chambers hewn on opposite sides. The shafts were completely filled up with field-soil and stones. In a number of cases a thick layer of silt was found on the rock floor of the burial chamber, and the funerary pottery and the organic remains deposited therein were found disturbed. This was due to the imperfect closure of the entrance by the sealing-slab, allowing the periodical flooding of the chamber by rain-water.

The pottery recovered from these tombs is generally made of imperfectly purified clay fired to a drab or a light red colour: it is commonly covered with a light buff wash. With the exception of five lamps, that are hand modelled, this ware is turned on the wheel.

(*a*) THE TAL LIEDNA TOMBS

Between the 28th October and the 21st December, 1948, six tombs were discovered at Tal Liedna Road (Malta 2″ Map Ref. 487230). They were irregularly clustered in an area of about 722 square yards and their long axis, passing through the shaft and chamber, did not indicate any particular orientation.

Tomb No. 4. Discovered on the 28th October, 1948. Orientation north-west. Fig. 2, no. 1.

The shaft was 6 ft. 3 in. long and 5 ft. wide at the surface, and 4 ft. long and 5 ft. wide at the bottom. This disparity was due to the sloping inwards of the north-west wall. It attained a depth of 5 ft. 6 in.

The stone slab, 4 ft. high, 4 ft. 5 in. wide, and 8 in. thick, was found covering the entrance to the burial chamber, on the south-east side of the shaft. The entrance measured 3 ft. in height, 2 ft. 10 in. in width, and 1 ft. 3 in. in depth; the sill being 9 in. above the floor of the shaft.

The chamber, roughly ellipsoidal posteriorly and rectangular in front, had its floor on a level with that of the sill. It measured 5 ft. 3 in. in length, from 4 ft. to 5 ft. in width, and 3 ft. 3 in. in maximum height. In the floor, behind the sill, was excavated a quadrilateral cavity, 2 ft. 6 in. long, from 2 ft. 5 in. to 1 ft. 3 in. wide and of a maximum depth of 8 in.

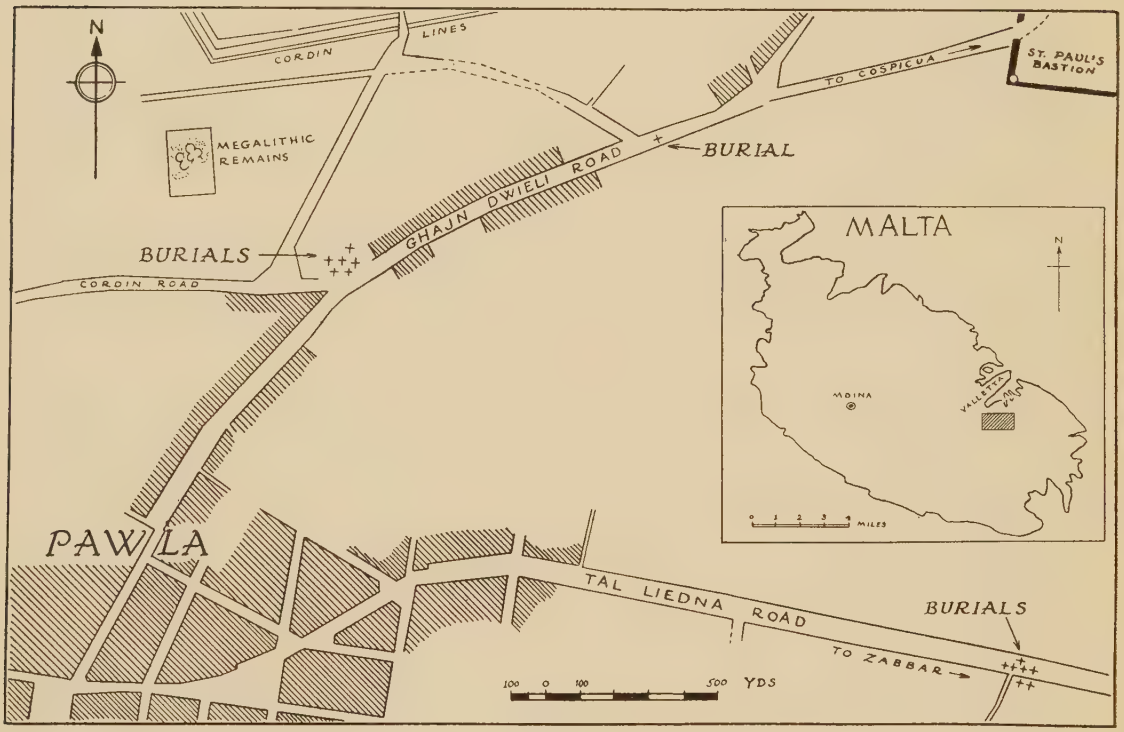

FIG. 1.

Inside the chamber were found the following terra-cotta objects:

One empty urn, ht. 11 in., decorated with red lines. Fig. 7, B 7.
One oinochoë, ht. 11 in., decorated with red lines. As Fig. 8, C 5.
One unguentarium, ht. $2\frac{3}{4}$ in. Fig. 10, D 5.
Two dishes:

(*a*) d. $6\frac{3}{4}$ in., decorated with red lines. Fig. 11, E 18.
(*b*) d. 7 in., decorated with red lines. Fig. 11, E 19.

One plate, d. $6\frac{3}{4}$ in. Fig. 11, E 9.
Two bilychnis lamps:

(*a*) max. d. 5 in., used. Fig. 12, F 2.
(*b*) max. d. $4\frac{1}{4}$ in., unused. As Fig. 12, F 2.

Lying on the floor of the chamber were the fragmentary remains of two human skeletons, probably both belonging to males, one adult and the other advanced in years. Animal remains were also represented by a metapodial bone and two isolated teeth of a goat or sheep.

Tomb No. 2. Discovered on the 29th October, 1948. Situated 10 ft. to the south of tomb No. 1. Orientation north-east. Fig. 2, no. 2.

The shaft was 4 ft. 9 in. long, 4 ft. 3 in. wide, and 4 ft. 9 in. deep. The sealing-slab, 3 ft. 3 in. high, 3 ft. wide, and 7 in. thick, was fitted to a rabbet, 4 in. wide and 5 in. deep, cut round the entrance to the burial chamber, on the north-east side. The entrance measured 2 ft. 7 in. in height, 2 ft. 6 in. in width, and 10 in. in depth; the sill being 9 in. higher than the floor of the shaft. A peculiarity of this entrance was the presence of a groove, $2\frac{1}{2}$ in. wide, cut through the middle of the sill to drain the burial chamber.

The apsidal chamber had its floor 6 in. lower than the sill. It measured 5 ft. 2 in. in width, 3 ft. 3 in. the depth, and attained a maximum height of 3 ft. In the floor, immediately behind the sill and parallel to it, was excavated a trench, 3 ft. 7 in. long, 6 in. wide, and 3 in. deep, drained by the groove cut in the sill.

Inside the chamber were found the following terra-cotta objects:

One jug, ht. $3\frac{1}{2}$ in. Fig. 10, D 8.
Two empty urns:

(*a*) ht. $10\frac{3}{4}$ in., decorated with black lines and a band. Fig. 7, B 4. It has a number of perforations, $\frac{1}{4}$ in. in diameter, on each side of an ancient fracture. These perforations were obviously used for threading a thong or cord to hold the vase together. This peculiarity has not been recorded before in Malta.

(*b*) ht. $8\frac{1}{2}$ in. Fig. 7, B 9.

One oinochoë, ht. 9 in. Fig. 8, C 3.
One aryballos, ht. 9 in. Fig. 8, C 2.
Three dishes:

(*a*) d. 6 in. As Fig. 11, E 17.
(*b*) d. $5\frac{3}{4}$ in. Fig. 11, E 13.
(*c*) d. $5\frac{1}{2}$ in. Fig. 11, E 15.

One plate, d. 6 in. As Fig. 11, E 11.

Three bilychnis lamps:

(*a*) max. d. 5 in., unused. As Fig. 12, F 1.
(*b*) max. d. $4\frac{1}{2}$ in., used, broken. As Fig. 12, F 1.
(*c*) max. d. $3\frac{1}{2}$ in., unused. Fig. 12, F 6.

On the floor were lying the skeletal remains, mostly in a fragmentary state, of four human adults. The cephalic index of two crania, one of a male and the other of a female, is 72·39 and 72·06 respectively.

Tomb No. 3. Discovered on the 30th November, 1948. Situated 60 ft. to the west of tomb No. 1. Orientation north-west. Fig. 2, no. 3.

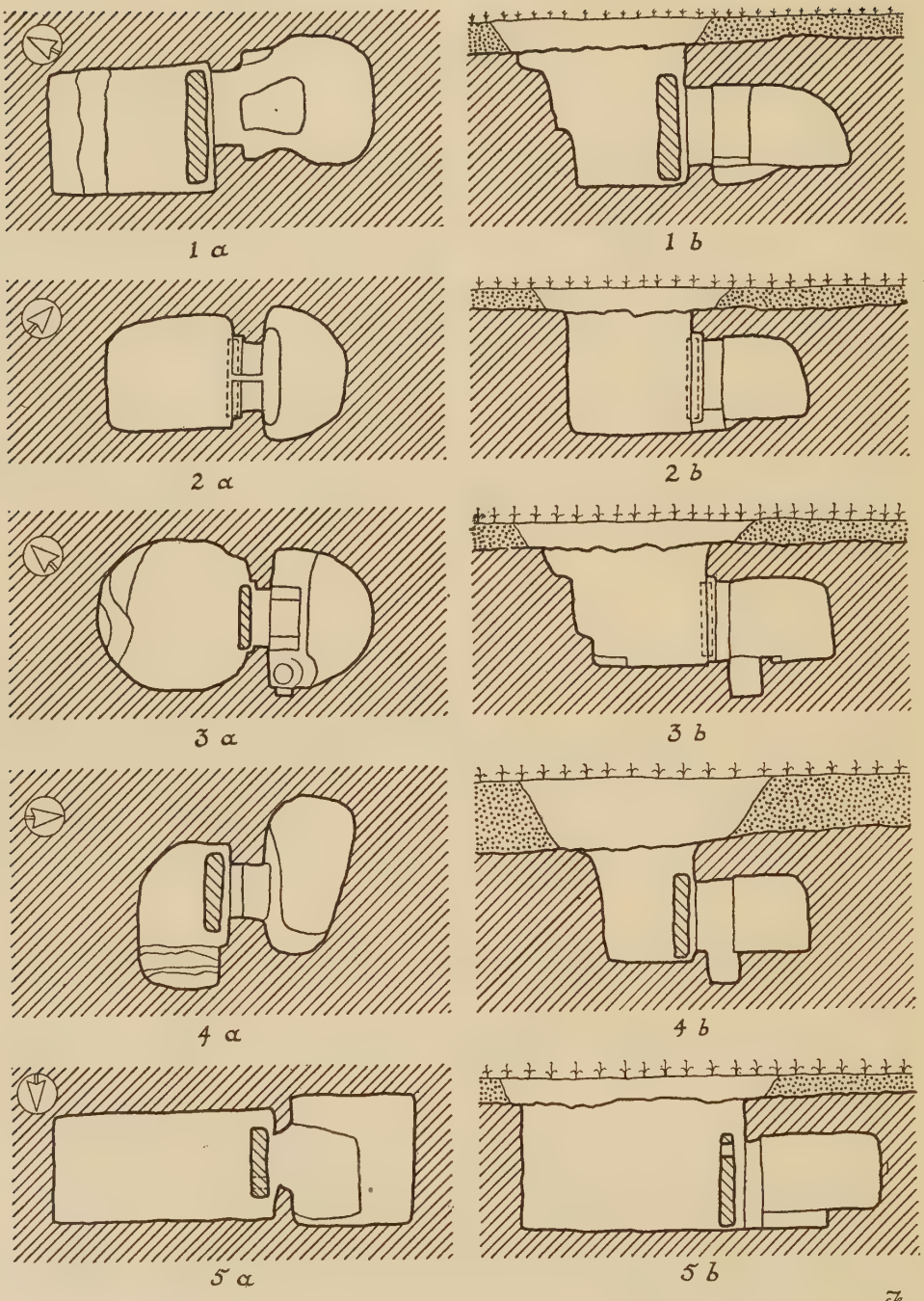

FIG. 2.—TAL LIEDNA, TOMBS 1–5.

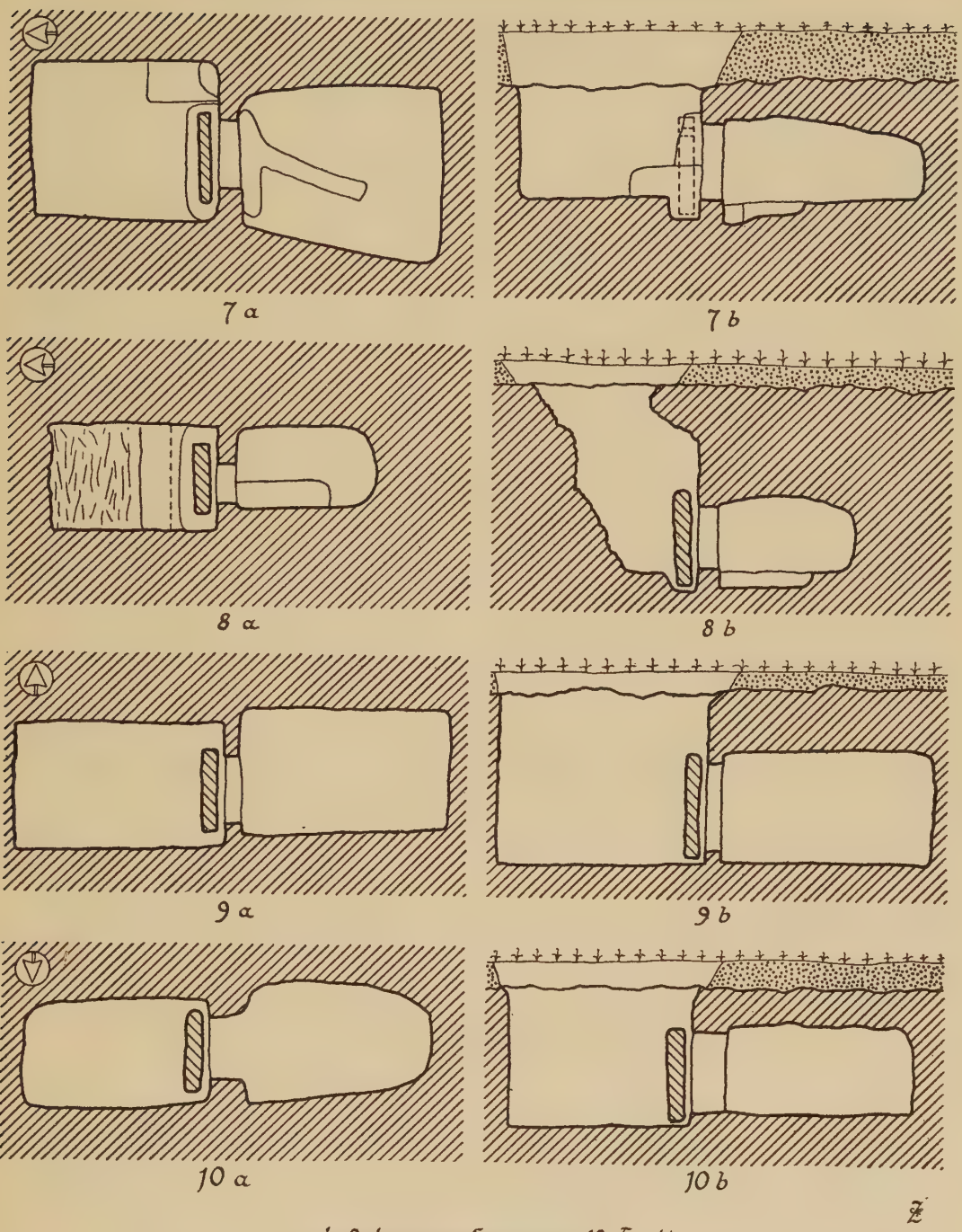

FIG. 3.—GHAJN DWIELI, TOMBS 7–10.

The shaft (Pl. I, 1) almost circular in plan, was 6 ft. in diameter and 4 ft. 3 in. deep. Three uneven steps were roughly cut on the north-west side. The sealing-slab, 3 ft. 2 in. high, 2 ft. 7 in. wide, and 4 in. thick, was fitted in a rabbet, 3 in. wide and

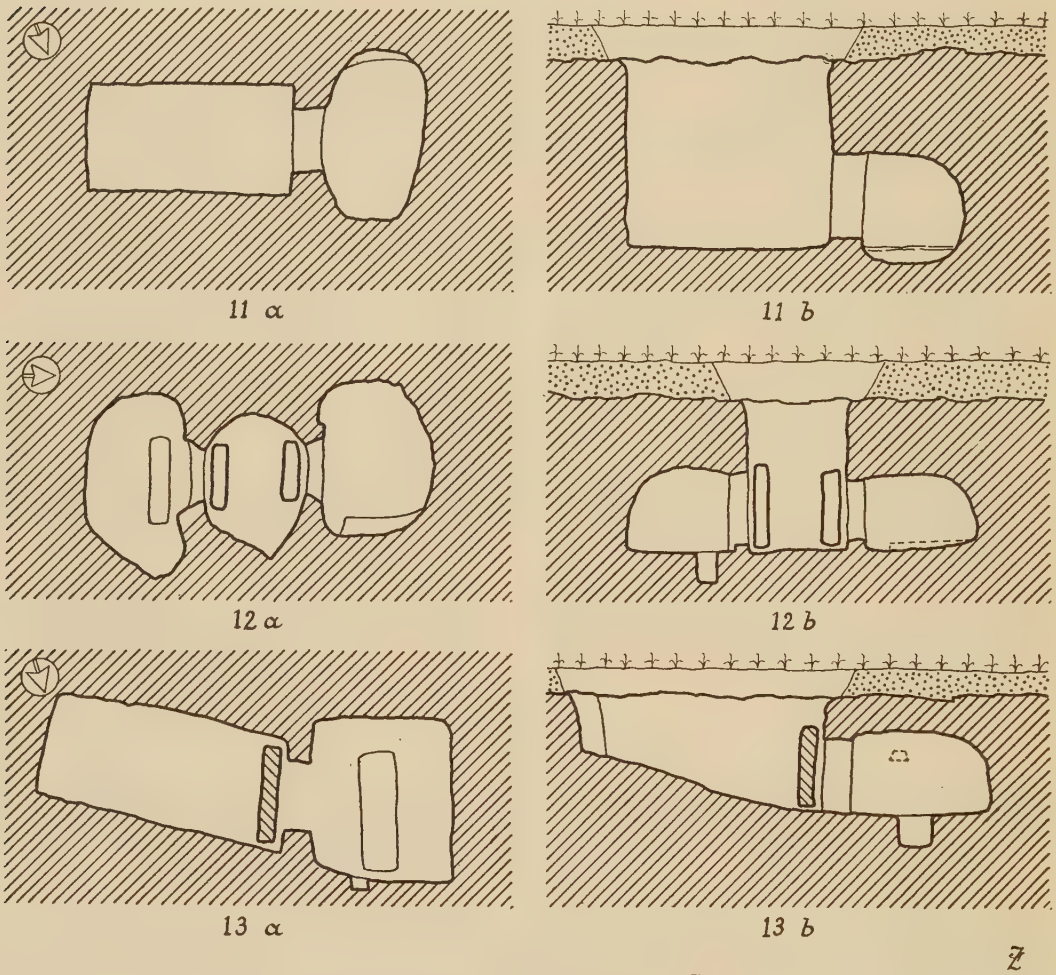

FIG. 4.—GHAJN DWIELI, TOMBS 11–13.

2 in. deep, cut along the lateral and upper sides of the entrance to the burial chamber, on the south-east side. The entrance (Pl. I, 2) measured 3 ft. in height, 2 ft. 3 in. in width, and 7 in. in depth; the sill being practically at the same level as the floor of the shaft.

The apsidal chamber had an uneven floor, its anterior third being on a level with the sill, and the rest 4 in. below it. It measured 5 ft. 4 in. in maximum width, 4 ft. in

depth, and attained a maximum height of 3 ft. 3 in. A trench, with sloping flanks, 2 ft. 6 in. long at the top and 1 ft. 6 in. at the bottom, 1 ft. 2 in. wide and 1 ft. 6 in. deep, was cut immediately behind the sill and parallel to it. At the west corner of the floor there was a shallow concave excavation, 8 in. in diameter and 3 in. deep at the centre. A rectangular lamp-hole was cut in the west side, close to the corner, at a height of 2 ft. 6 in. above the floor.

The floor of the chamber was covered by an ashy layer, varying in thickness from 6 in., at the centre, to 1 in. at the periphery. Numerous fragments of carbonized wood were embedded in this deposit.

The following terra-cotta objects were recovered from the chamber:

One amphora, ht. 25¼ in., with illegible potter's mark on one of its handles. As Fig. 6, A 1.

Seven urns containing calcined human bones:

(*a*) ht. 12¼ in. Fig. 7, B 2.
(*b*) ht. 11¾ in. As Fig. 7, B 12.
(*c*) ht. 11½ in. As Fig. 7, B 12.
(*d*) ht. 11 in. As Fig. 7, B 12.
(*e*) ht. 11 in. As Fig. 7, B 12.
(*f*) ht. 10¼ in. As Fig. 7, B 12.
(*g*) ht. 8 in. Fig. 7, B 8.

Three oinochoai:

(*a*) ht. 9 in., decorated with red paintings on the body and low reliefs on the handle. Fig. 9, C 7; pl. III, 2.
(*b*) ht. 9½ in., decorated with red lines. As Fig. 8, C 4.
(*c*) ht. 9 in., decorated with red lines; broken. As Fig. 8, C 6.

One aryballos, ht. 5 in. Fig. 10, D 6.

One squat lekythos, ht. 4 in. Fig. 10, D 2; pl. III, 1.

Nine unguentaria:

(*a*) ht. 6¾ in. Fig. 10, D 4.
(*b*) ht. 3½ in., decorated with red lines. As Fig. 10, D 1.
(*c*) ht. 3½ in. As Fig. 10, D 1.
(*d*) ht. 3 in., decorated with red lines. As Fig. 10, D 1.
(*e*) ht. 3 in. As Fig. 10, D 1.
(*f*) ht. 3 in. As Fig. 10, D 1.
(*g*) ht. 3 in. As Fig. 10, D 1.
(*h*) ht. 2½ in. Fig. 10, D 3.
(*i*) broken; neck missing.

One bowl, d. 4¼ in. Fig. 11, E 16.

Three calices:

(*a*) d. 6½ in. As Fig. 11, E 25.
(*b*) d. 6¼ in. As Fig. 11, E 25.
(*c*) d. 5½ in. As Fig. 11, E 24.

Two dishes:

(*a*) d. $5\frac{1}{2}$ in. Fig. 11, E 17.
(*b*) d. $3\frac{1}{4}$ in. Fig. 11, E 3.

Nine plates:

(*a*) d. $7\frac{1}{2}$ in. As Fig. 11, E 12.
(*b*) d. $7\frac{1}{2}$ in. As Fig. 11 E 11.
(*c*) d. 7 in. As Fig. 11, E 10.
(*d*) d. $6\frac{3}{4}$ in. As Fig. 11, E 11.
(*e*) d. $6\frac{3}{4}$ in. As Fig. 11, E 10.
(*f*) d. $6\frac{1}{2}$ in. As Fig. 11, E 10.
(*g*) d. $6\frac{1}{2}$ in. As Fig. 11, E 4.
(*h*) d. 4 in. Fig. 11, E 1.
(*i*) d. 4 in. Fig. 11, E 8.

Nine bilychnis lamps:

(*a*) max. d. 5 in., used. As Fig. 12, F 1.
(*b*) max. d. 4 in., used. As Fig. 12, F 3.
(*c*) max. d. $3\frac{3}{4}$ in., used. Fig. 12, F 3.
(*d*) max. d. $3\frac{3}{4}$ in., used. As Fig. 12, F 3.
(*e*) max. d. $3\frac{1}{2}$ in., used. As Fig. 12, F 3.
(*f*) max. d. $3\frac{1}{2}$ in., used. As Fig. 12, F 3.
(*g*) max. d. $3\frac{1}{2}$ in., used. Fig. 12, F 5.
(*h*) max. d. $3\frac{1}{4}$ in., used. As Fig. 12, F 3.
(*i*) max. d. $2\frac{1}{2}$ in., used. Fig. 12, F 7.

One monolychnis lamp, max. d. $2\frac{1}{2}$ in., used. Fig. 12, F 8.

Fragments of a bronze bracelet, as Fig. 5, H, were also found.

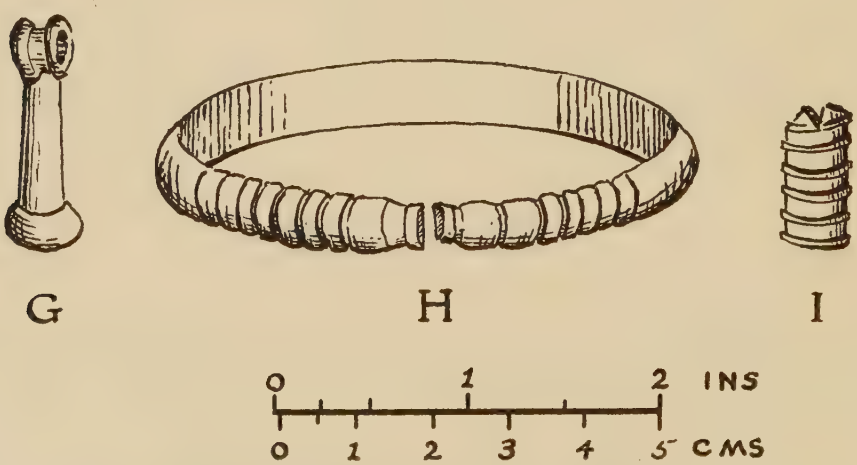

FIG. 5.—BRONZE BRACELET FROM TOMB 6, AND SILVER PENDANT AND FRAGMENT OF SILVER TUBE FROM TOMB 12.

Fragmentary remains of four human skeletons belonging to adults, one of which exhibited traces of the action of fire, were dispersed in the ashy deposit on the floor of the chamber.

Tomb No. 4. Discovered on the 1st December, 1948. Situated 23 ft. to the north-west of tomb No. 3. Orientation north. Fig. 2, no. 4.

The shaft, 5 ft. 6 in. long and 3 ft. 3 in. wide, at the surface, attained a depth of 4 ft. 6 in. Its east side was slanting inwards, reducing the length of the floor to 3 ft. 6 in. A fragment of a large terra-cotta vessel was obtained from the filling of the shaft. The sealing-slab, 3 ft. square and 8 in. thick, covered the entrance to the burial chamber, on the north side of the shaft. The entrance measured 2 ft. 7 in. in height, 2 ft. 2 in. in width, and 1 ft. 5 in. in depth; there was no sill, and in its place was cut a trench, 2 ft. 2 in. long, 1 ft. 2 in. wide, and 1 ft. 4 in. deep, bounded anteriorly by a ledge, 3 in. wide and 2 in. high.

The ellipsoidal chamber, measuring 6 ft. 2 in. in length, 2 ft. 6 in. in width, and 3 ft. in height, had its floor on a level with that of the shaft. A ledge, 2 in. high and varying from 3 in. to 1 ft. in width, extended along the south and the east sides of the floor.

Inside the chamber were found the following terra-cotta objects:

Two empty urns:

(*a*) ht. 10½ in., decorated with black lines and bands. Fig. 7, B 3.
(*b*) ht. 10½ in., decorated with black lines and bands. Fig. 7, B 1.

Three calices:

(*a*) d. 5¾ in., decorated with red lines and bands. Fig. 11, E 26.
(*b*) d. 5½ in., decorated with red lines and bands. Fig. 11, E 24.
(*c*) d. 5¼ in., decorated with red lines and bands. As Fig. 11, E 24.

Two plates:

(*a*) d. 4¾ in. As Fig. 11, E 11.
(*b*) d. 3¾ in. As Fig. 11, E 4.

Two bilychnis lamps:

(*a*) max. d. 4½ in., used. As Fig. 12, F 1.
(*b*) max. d. 4½ in., used. As Fig. 12, F 1.

Fragmentary remains of three human skeletons belonging to adults were scattered on the floor of the chamber.

Tomb No. 5. Discovered on the 6th December, 1948. Situated 2 ft. to the south of tomb No. 4. Orientation east. Fig. 2, no. 5.

The shaft was 8 ft. 6 in. long, 4 ft. wide, and 5 ft. deep. The sealing-slab, 3 ft. 6 in. high, 2 ft. 7 in. wide, and 7 in. thick, covered the entrance to the burial chamber, on the west side of the shaft. A peculiarity of this slab was the presence of a circular perforation, 6 in. in diameter, near the top angle on the right-hand side. The entrance measured 3 ft. 5 in. in height, and owing to splayed jambs, its width varied from 2 ft. 1 in. externally to 2 ft. 6 in. internally; the sill being on a level with the floor of the shaft.

The chamber, 5 ft. long, 4 ft. 6 in. wide, and 3 ft. 8 in. high, had its floor on a level with the sill and its flat ceiling curved gently towards the sides. A platform, 8 in. high and 2 ft. in average width, ran along the south and the west sides.

Inside the chamber were found the following terra-cotta objects (Pl. II, 1):

One amphora, ht. 25¼ in., with illegible potter's mark on one of the handles. As Fig. 6, A 1.

One jar, ht. 12¾ in., decorated with red lines. Fig. 7, B 11.

Three urns containing calcined human bones:

(*a*) ht. 10½ in. Fig. 7, B 12.
(*b*) ht. 10¼ in. As Fig. 7, B 12.
(*c*) ht. 8¾ in. Fig. 7, B 10.

One oinochoë, ht. 6¼ in. Fig. 8, C 1.
One aryballos, ht. 5¼ in. Fig. 10, D 7.
Two unguentaria:

(*a*) ht. 3½ in. Fig. 10, D 1.
(*b*) ht. 3 in., decorated with red lines. As Fig. 10, D 1.

Fragments of a calyx. As Fig. 11, E 25.
Three dishes:

(*a*) d. 3¾ in. Fig. 11, E 6.
(*b*) d. 3¾ in. Fig. 11, E 2.
(*c*) d. 3¾ in. As Fig. 11, E 2.

Four plates:

(*a*) d. 7¼ in. Fig. 11, E 12.
(*b*) d. 6¾ in. As Fig. 11, E 11.
(*c*) d. 4¾ in. Fig. 11, E 4.
(*d*) d. 4 in. As Fig. 11, E 4.

One bilychnis lamp, max. d. 4¾ in., used. As Fig. 12, F 2.

Human bones were heaped up on the south side of the platform. They represented three males and two females. Two of the males were adults and the other aged about 16 years. Both females were adults. The cephalic index of the male adults is 72·5 and 78·03, and that of the females 73·01 and 75·32 respectively.

Tomb No. 6. Discovered on the 21st December, 1948. Situated 21 ft. to the north-west of tomb No. 1.

This tomb, having been unnoticed prior to blasting, was totally destroyed. From the debris were recovered a bowl, d. 5 in. (Fig. 11, E 20), a calyx, d. 6½ in., decorated with red lines and bands (Fig. 11, E 27), and two bronze bracelets, one in a good state of preservation (Fig. 5, H), and the other in fragments.

(*b*) The Ghajn Dwieli Tombs

Between the 20th and the 27th January, 1949, six tombs were discovered at Ghajn Dwieli Road (Malta 2″ Map Ref. 479235). They were irregularly grouped in an area of about 444 square yards, and presented no special orientation. On the 31st March, 1949, another tomb was found, situated at a distance of 320 yards to the east-north-east of the other tombs (Malta 2″ Map Ref. 482236).

Tomb No. 7. Discovered on the 20th January, 1949. Orientation north. Fig. 3, no. 7.

The shaft, 7 ft. 7 in. long, 6 ft. 9 in. wide, and 4 ft. 9 in. deep, was provided with two roughly hewn and unequal steps in the south-west corner. A trench, 4 ft. 9 in. long, 1 ft. 3 in. wide, and 1 ft. deep, was cut in its floor just in front of the sill of the entrance to the burial chamber and parallel to it.

The sealing-slab, 4 ft. high, 3 ft. 8 in. wide, and 6 in. thick, was covering the entrance to the burial chamber, on the south side. It rested on the bottom of the trench. A semicircular notch, 3 in. in diameter, was cut across its west side, 8 in. from the top. The entrance measured 3 ft. 2 in. in height, 2 ft. 9 in. in width, and 11 in. in depth; the sill being 3 in. below the level of the floor of the shaft and 9 in. above the bottom of the trench cut in front of it.

The chamber had its floor 4 in. below the level of the sill. It measured 8 ft. 3 in. in length, from 5 ft. 8 in. to 7 ft. 3 in. in width, and from 2 ft. 6 in. to 3 ft. 6 in. in height; the ceiling curved gently posteriorly. A T-shaped trench, with an average width of 9 in. and a depth varying from 11 in. to 6 in., was cut in the floor.

Inside the chamber were found the following terra-cotta objects (Pl. II, 2):

One amphora, ht. 21 in., decorated with red lines. Fig. 6, A 3.
One oinochoë, ht. 10¾ in., decorated with red lines. Fig. 8, C 5.
One dish, d. 6¼ in., decorated with red lines. Fig. 11, E 22.

Two plates:

(*a*) d. 6 in., decorated with red lines. Fig. 11, E 11.
(*b*) d. 6 in., decorated with red lines; broken. As Fig. 11, E 14.

One bilychnis lamp, max. d. 4¾ in., unused. As Fig. 12, F 1.

Dispersed on the floor were lying the fragmentary remains of a human skeleton belonging to an adult male.

Tomb No. 8. Discovered on the 20th January, 1949. Situated 55 ft. to the west of tomb No. 7. Orientation north. Fig. 3, no. 8.

The shaft was 5 ft. long and 4 ft. 6 in. wide at the surface, and 3 ft. long and 4 ft. 6 in. wide at the bottom. This inequality was due to the slanting inwards of the north side. It attained a depth of 7 ft. 9 in. The upper 2 ft. of the south side formed a projecting ledge. A trench, 4 ft. 6 in. long, 1 ft. 5 in. wide, and 9 in. deep, was cut in its floor, just in front of the sill of the entrance to the burial chamber, and parallel to it.

The stone slab, 4 ft. high, 3 ft. wide, and 9 in. thick, was covering the entrance to

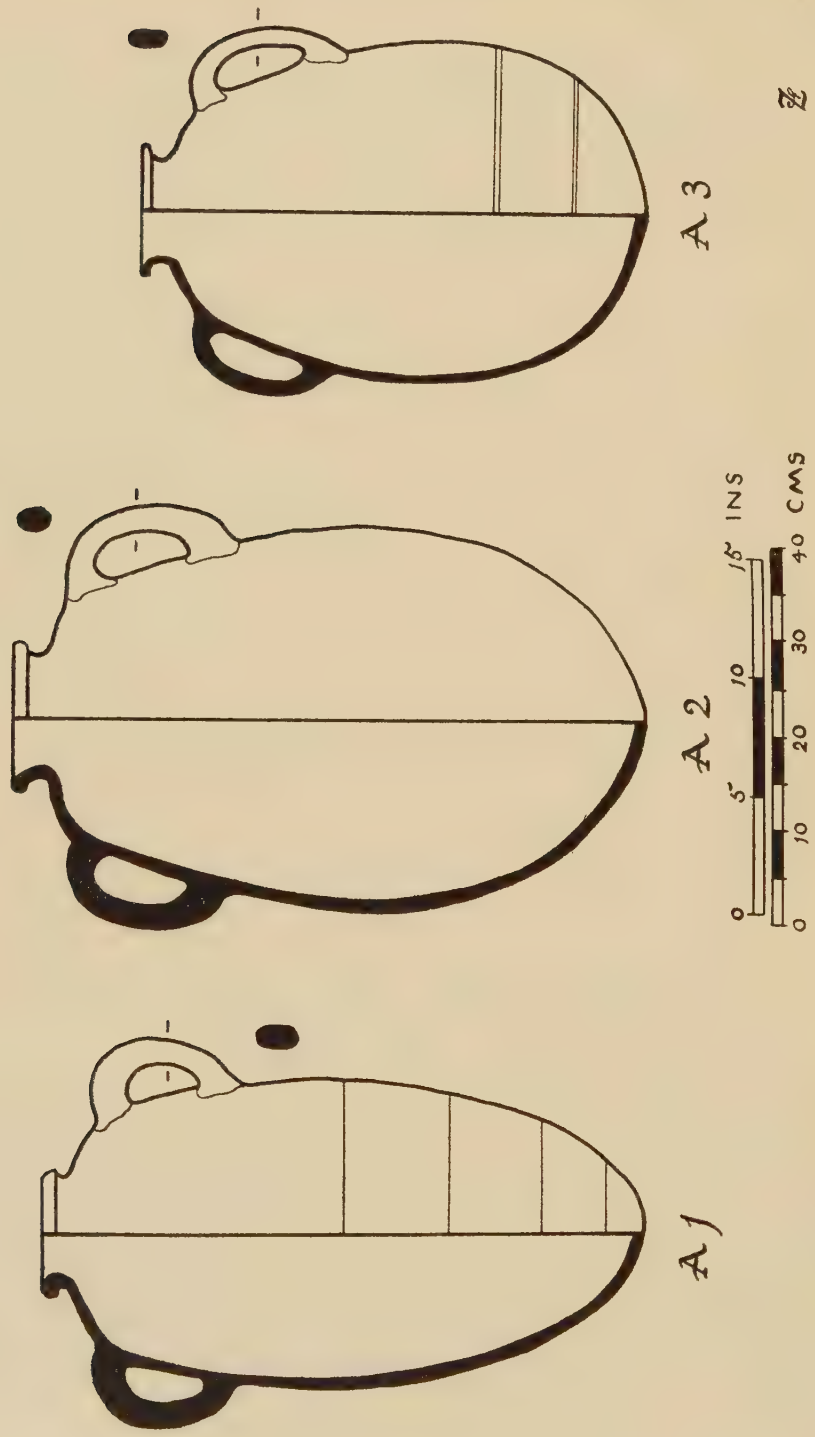

FIG. 6.—AMPHORAE.

the chamber, on the south side. It rested on the bottom of the trench. The entrance measured 2 ft. 7 in. in height, 1 ft. 6 in. in width, and 9 in. in depth; the sill being on a level with the floor of the shaft.

The chamber, 5 ft. 7 in. long, 3 ft. 6 in. wide, and 3 ft. 3 in. high, had its floor 2 in. below the level of the sill. Along the west side of the floor was cut a trench, 3 ft. 9 in. long, 1 ft. 2 in. wide, and 9 in. deep.

Inside the chamber were found the following terra-cotta objects:

An empty urn, ht. 9 in. Fig. 7, B 6.

Three oinochoai:

(*a*) ht. 10¾ in., decorated with red lines. As Fig. 8, C 5.
(*b*) ht. 9¼ in. As Fig. 8, C 5.
(*c*) in fragments. As Fig. 8, C 4.

Three dishes:

(*a*) d. 6¼ in. As Fig. 11, E 19.
(*b*) d. 5 in. Fig. 11, E 5.
(*c*) d. 3¾ in. Fig. 11, E 7.

One bilychnis lamp, max. d. 4¾ in., unused. As Fig. 12, F 1.

Human bones, some of which in a fragmentary state, were dispersed on the floor of the chamber. They represented five individuals: a child of about three years, one aged about sixteen years, two adults, and one advanced in years.

The cephalic index of the two adults, a male and a female, is 69·94 and 77·96, respectively.

Tomb No. 9. Discovered on the 22nd January, 1949. Situated 20 ft. to the west of tomb No. 7. Orientation east. Fig. 3, no. 9.

The shaft was 9 ft. long, 5 ft. 3 in. wide, and 7 ft. 3 in. deep. The stone slab, 4 ft. 5 in. high, 3 ft. 3 in. wide, and 7 in. thick, was covering the entrance to the burial chamber, on the east side of the shaft. The entrance measured 3 ft. 7 in. in height, 2 ft. 9 in. in width, and 9 in. in depth; the sill being 6 in. above the floor of the shaft.

The rectangular chamber, 8 ft. 9 in. long, 5 ft. 3 in. wide, and 4 ft. 9 in. high, had its floor 6 in. below the sill.

Inside the chamber were found the following terra-cotta objects:

One amphora, ht. 21 in., decorated with red lines. As Fig. 6, A 3.
One oinochoë, ht. 10¾ in., decorated with red lines. Fig. 8, C 4.
One bilychnis lamp, max. d. 4½ in., used. As Fig. 12, F 2.

Scattered on the floor of the chamber were fragments of two human skeletons belonging to an adult and to an individual advanced in years.

Tomb No. 10. Discovered on the 22nd January, 1949. Situated 15 ft. to the south-west of tomb No. 7. Orientation east. Fig. 3, no. 10.

The rectangular shaft was 7 ft. 6 in. long, 4 ft. wide, and 5 ft. deep. The sealing-slab, 4 ft. high, 3 ft. 2 in. wide, and 9 in. thick, covered the entrance to the burial

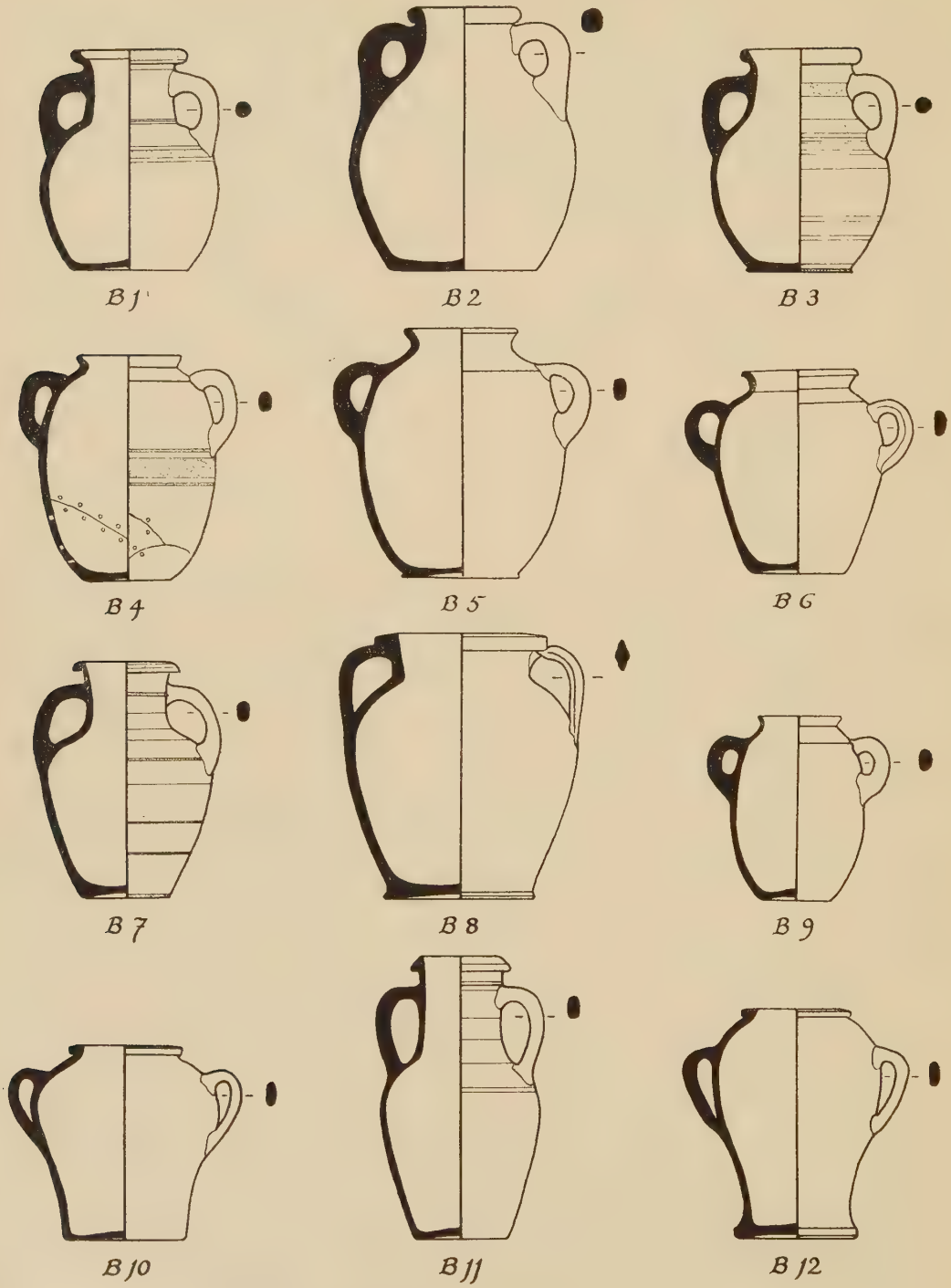

FIG. 7.—CINERARY URNS.

chamber, on the west side. The entrance measured 3 ft. 3 in. in height, 2 ft. 6 in. in width, and 1 ft. 6 in. in depth; the sill being 6 in. above the floor of the shaft.

The quadrilateral chamber, 7 ft. 9 in. long, from 5 ft. 2 in. to 3 ft. 5 in. wide, and 3 ft. 9 in. high, had its floor on a level with the sill.

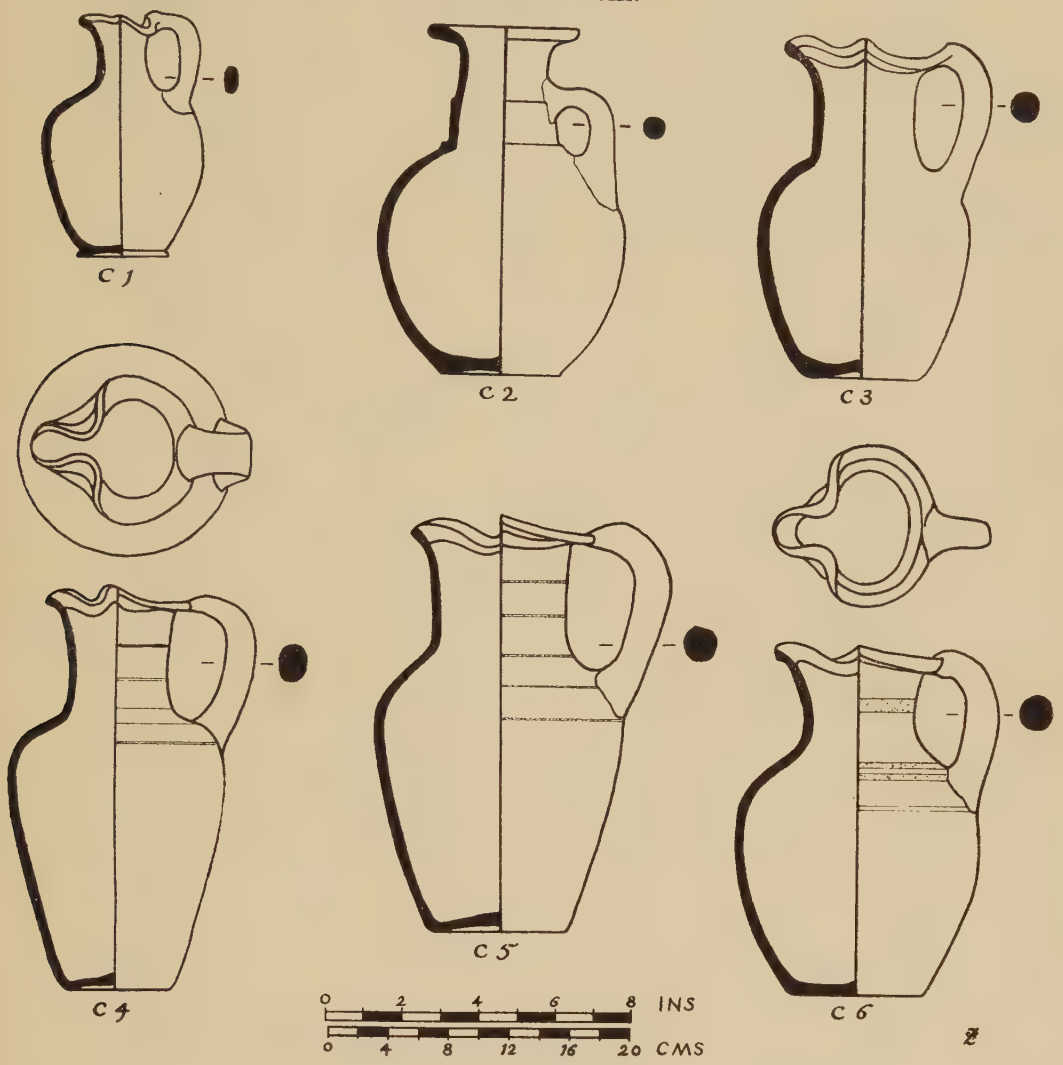

FIG. 8.—OINOCHOAI.

In the chamber were found the following terra-cotta objects:

One amphora, ht. 21¼ in. Fig. 6, A 2.
One oinochoë, ht. 12 in. As Fig. 8, C 4.
Fragments of a plate, d. 3 in. As Fig. 11, E 4.
One bilychnis lamp, max. d. 4½ in., used. As Fig. 12, F 2.

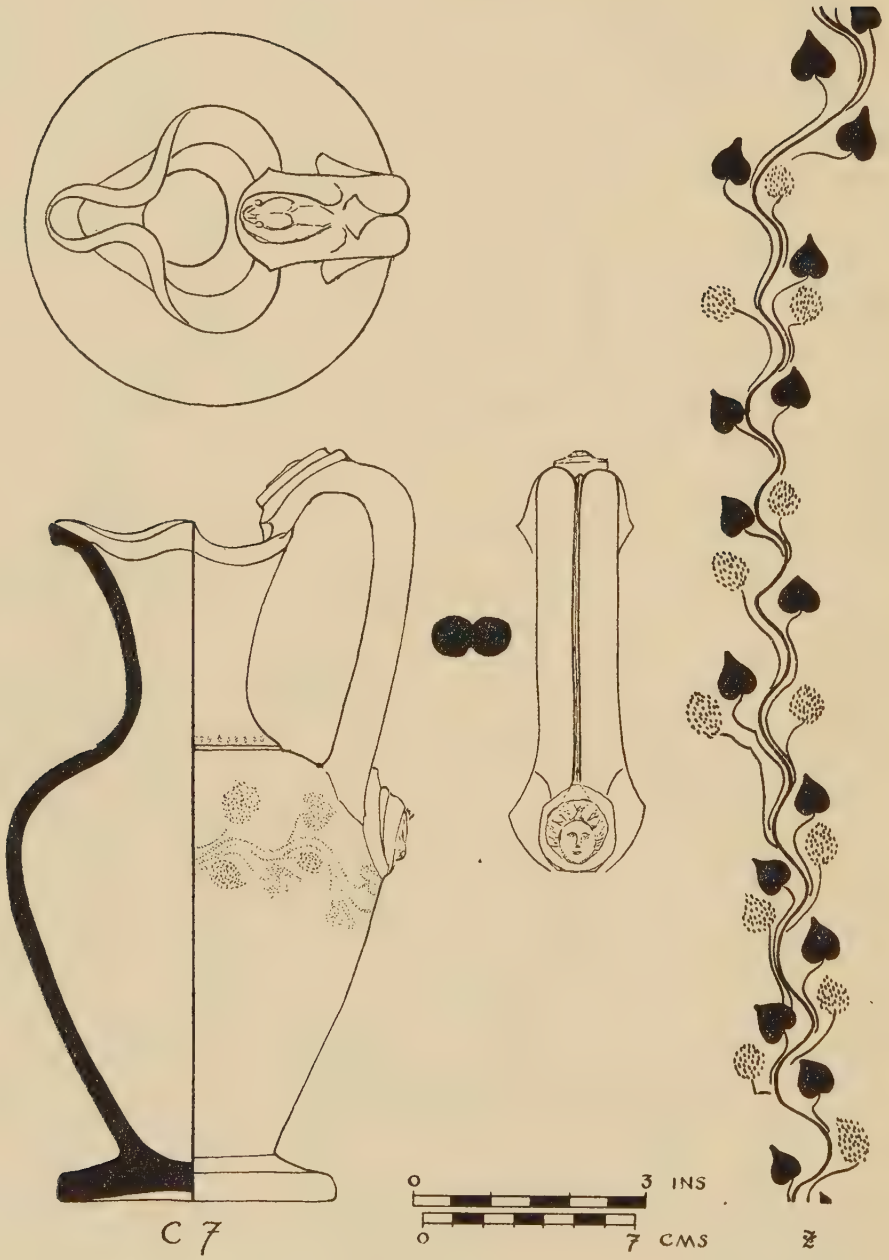

FIG. 9.—OINOCHOË FROM TOMB 3.

On the floor were lying the fragmentary remains of two human skeletons belonging to adults. The cephalic index of one of these, a male, is 72·43.

Tomb No. 11. Discovered on the 26th January, 1949. Situated 30 ft. to the south-east of tomb No. 7. Orientation west-north-west. Fig. 4, no. 11.

This tomb had been opened a long time ago and its contents completely rifled.

The rectangular shaft was 7 ft. 6 in. long, 4 ft. 3 in. wide, and 7 ft. 3 in. deep. The sealing-slab was missing. The entrance to the burial chamber, on the west-north-west side, measured 3 ft. 3 in. in height, 2 ft. 5 in. in width, and 1 ft. 3 in. in depth; the sill being 3 in. above the floor of the shaft.

The chamber, oval in plan, had its floor 1 ft. below the sill, and the ceiling curved posteriorly. It measured 6 ft. 5 in. in length, 3 ft. 10 in. in width, and 4 ft. 3 in. in maximum height.

By sifting the silt covering the floor of the chamber, a copper needle, $3\frac{1}{2}$ in. long, was recovered.

Tomb No. 12. Discovered on the 27th January, 1949. Situated 15 ft. to the west of tomb No. 11. Orientation north. Fig. 4, no. 12.

The shaft, somewhat oval in plan, was 5 ft. 3 in. long, 3 ft. 6 in. wide, and 5 ft. 9 in. deep. It served two burial chambers situated one on the north side and the other opposite to it.

The sealing-slab on the north side was 2 ft. 10 in. high, 2 ft. 5 in. wide, and 9 in. thick. That on the south side was 3 ft. 2 in. high, 2 ft. 6 in. wide, and 7 in. thick.

The entrance to the north chamber measured 2 ft. 2 in. in height, 2 ft. 2 in. in average width, and 9 in. in depth. That leading to the south chamber was 2 ft. 7 in. high, 2 ft. in average width, and 1 ft. 3 in. deep. The jambs of both these passages splayed slightly inwards, and each sill was 3 in. higher than the floor of the shaft.

The north apsidal chamber, 6 ft. long, 4 ft. 2 in. wide, and 2 ft. 9 in. high, had its floor 4 in. below the sill. A ledge, 9 in. wide and 2 in. high, was situated along the east wall.

The south chamber, roughly oval in plan, measured 6 ft. 9 in. in length, 3 ft. 6 in. in width, and 3 ft. in height. The floor was 3 in. below the sill, and the ceiling curved posteriorly. Behind the sill, and parallel to it was cut a trench, 2 ft. 9 in. long, 9 in. wide, and 1 ft. 3 in. deep.

Inside the north chamber were found the following terra-cotta objects:

One oinochoë, ht. $8\frac{1}{2}$ in. As Fig. 8, C 3.

Two dishes:

(*a*) d. 6 in. As Fig. 11, E 19.
(*b*) d. $5\frac{3}{4}$ in., decorated with red lines. Fig. 11, E 23.

Three plates:

(*a*) d. 7 in. As Fig. 11, E 11.
(*b*) d. 7 in. As Fig. 11, E 11.
(*c*) d. 7 in. As Fig. 11, E 11.

One bilychnis lamp, max. d. $4\frac{3}{4}$ in., used. Fig. 12, F 1.

A silver pendant $1\frac{1}{8}$ in. long, Fig. 5 G, and a fragment of a decorated silver tube, Fig. 5 I, were also recovered from the silt deposited on the floor.

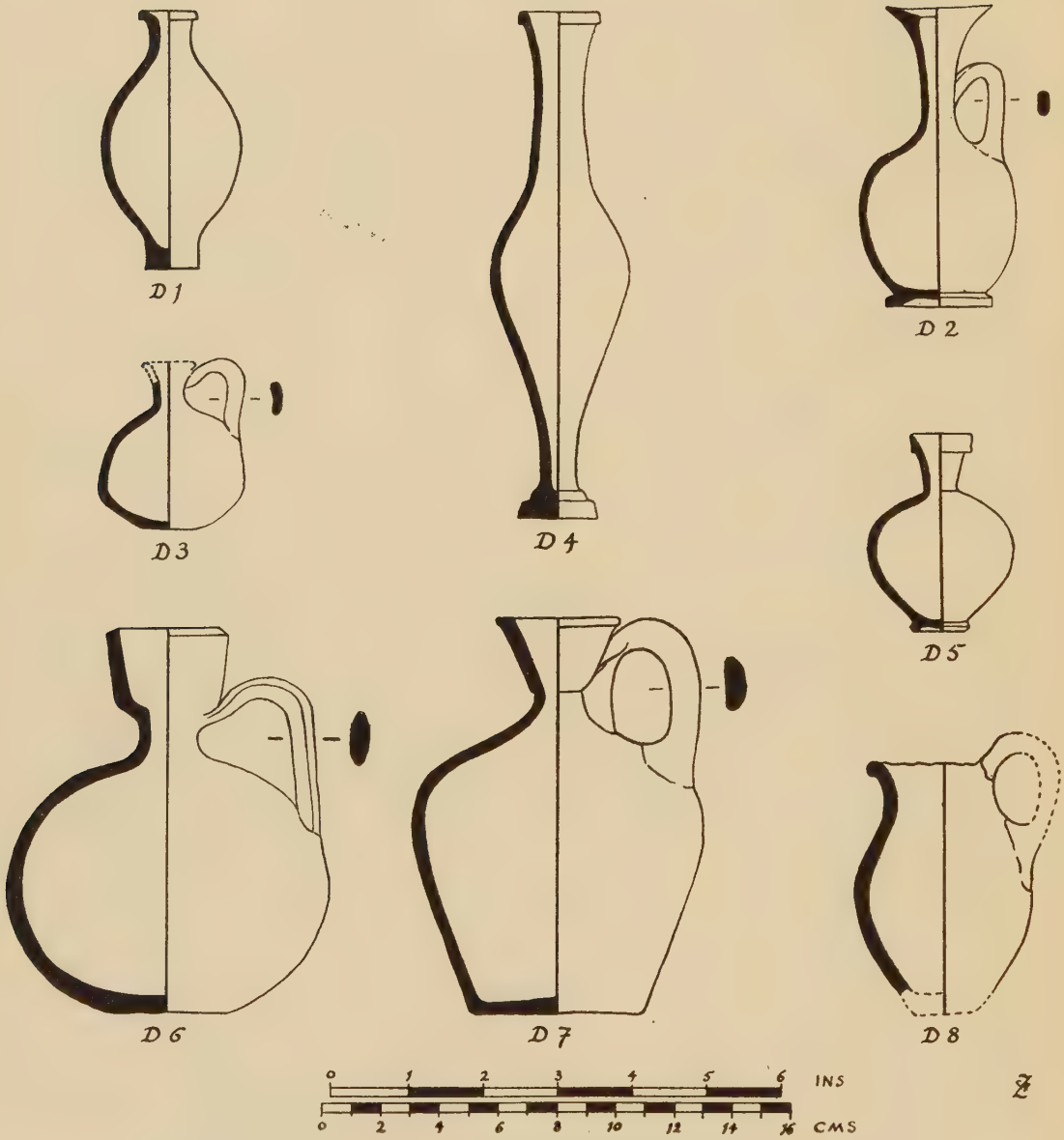

FIG. 10.—UNGUENTARIA, LEKYTHOS, SMALL JUG AND ARYBALLOI.

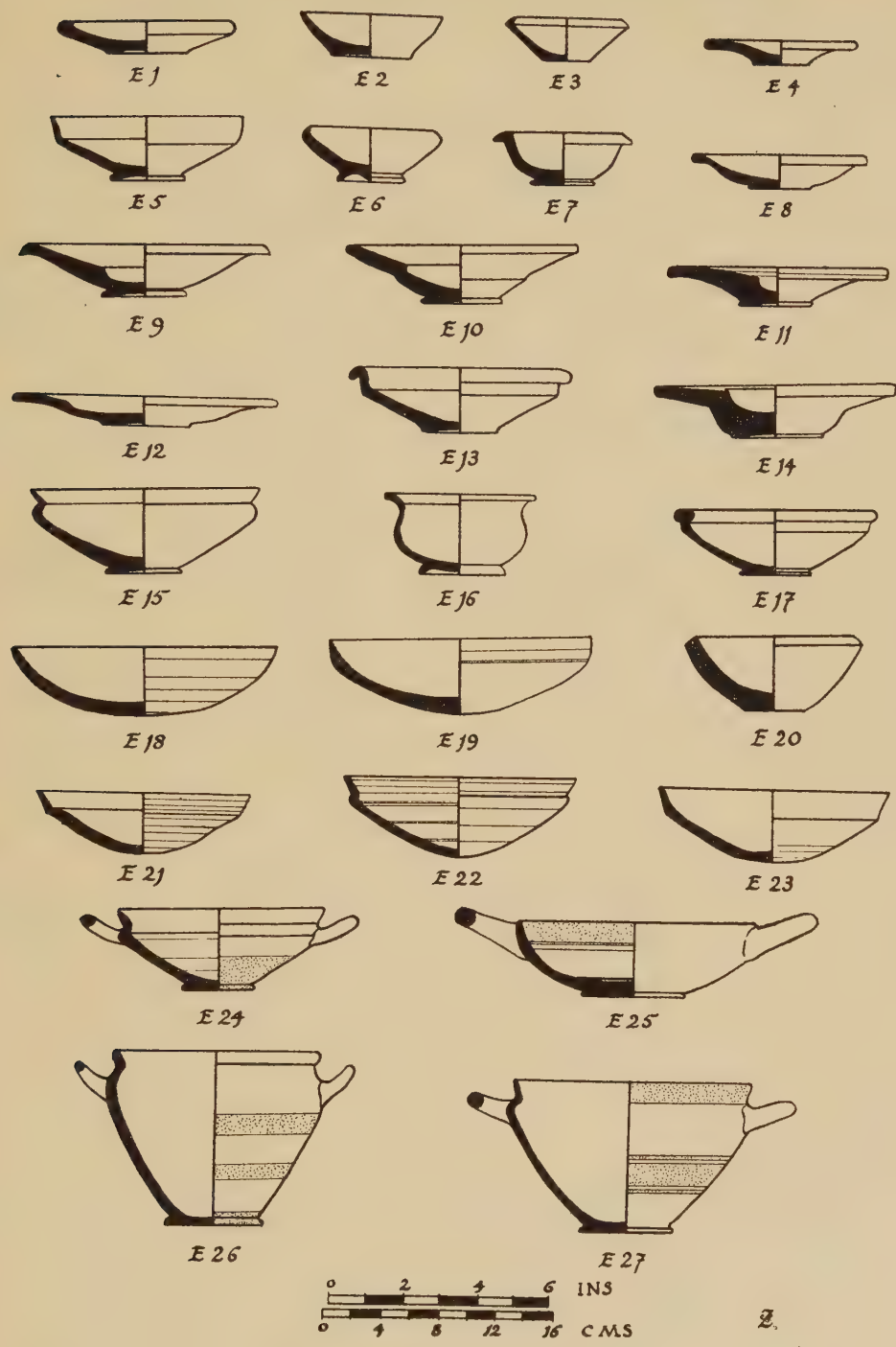

FIG. 11.—PLATES, DISHES, CALICES.

From the south chamber were obtained the following terra-cotta objects:

Three empty urns:

(*a*) ht. 10¼ in. Fig. 7, B 5.
(*b*) ht. 10 in. As Fig. 7, B 6.
(*c*) ht. 9½ in. As Fig. 7, B 6.

One oinochoë, ht. 9¼ in., decorated with red lines. Fig. 8, C 6.

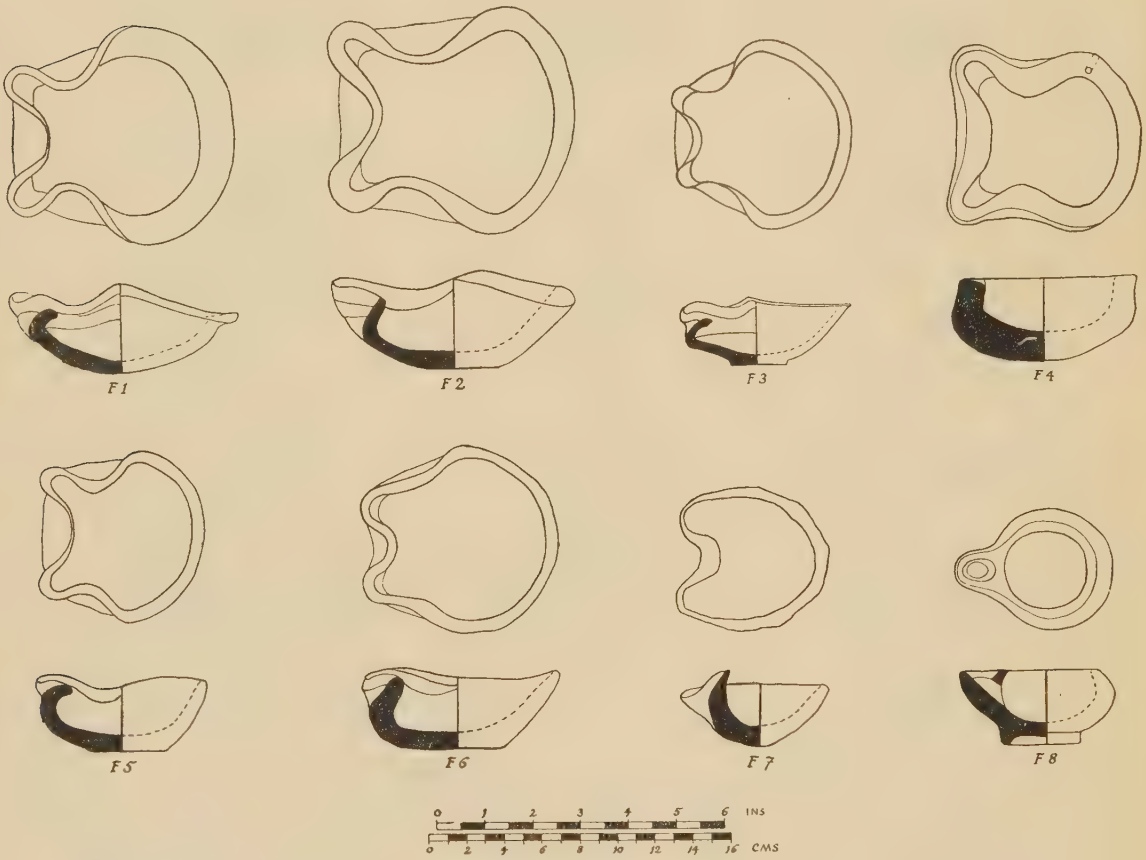

FIG. 12.—LAMPS.

Two dishes:

(*a*) d. 6¼ in., decorated with red lines. Fig. 11, E 23.
(*b*) d. 5½ in., decorated with red lines. Fig. 11, E 21.

One plate, d. 6¼ in. Fig. 11, E 10.
Two bilychnis lamps:

(*a*) max. d. 4¾ in., unused. As Fig. 12, F 1.
(*b*) max. d. 4 in., used. Fig. 12, F 4.

Fragments of a human skeleton were found dispersed on the floor of each of the chambers.

Tomb No. 13. Discovered on the 31st March, 1949. Situated 320 yards to the east-north-east of the above group. Orientation east. Fig. 4, no. 13.

The rectangular shaft was 9 ft. long, 4 ft. wide, and from 2 ft. to 4 ft. 3 in. deep, the unevenness of the floor being due to its inclination from east to west. The sealing-slab, 3 ft. high, 3 ft. 6 in. wide, and 8 in. thick, covered the entrance to the burial chamber, on the west side. The entrance measured 2 ft. 8 in. in height, 2 ft. 6 in. in width, and 1 ft. 3 in. in depth; the sill being on a level with the deepest part of the shaft.

The chamber, 6 ft. long, 5 ft. wide, and 3 ft. high, had its floor on a level with the sill, and the ceiling curved towards the sides.

In the middle of the floor was cut a trench, 4 ft. 7 in. long, 1 ft. 6 in. wide, and 1 ft. 2 in. deep. A lamp-hole was situated in the north side at a height of 2 ft. from the floor.

The following terra-cotta objects were found in the chamber:

One amphora, ht. 25 in., decorated with red lines. Fig. 6, A 1.
One calyx, d. 6½ in., decorated with red lines and bands. Fig. 11, E 25.
One bilychnis lamp, max. d. 4¼ in., used. As Fig. 12, F 2.

On the floor of the chamber were the fragmentary remains of a human skeleton, representing a male advanced in years.

The following check-list indicates the tombs in which the types of pottery illustrated (Figs. 6–12) were found:

Fig. 6:
A 1. Tomb 13; similar vessels in tombs 3 and 5.
A 2. Tomb 10.
A 3. Tomb 7; similar vessel in tomb 9.

Fig. 7:
B 1. Tomb 4.
B 2. Tomb 3.
B 3. Tomb 4.
B 4. Tomb 2.
B 5. Tomb 12.
B 6. Tomb 8; similar vessel in tomb 12.
B 7. Tomb 1.
B 8. Tomb 3.
B 9. Tomb 2.
B 10. Tomb 5.
B 11. Tomb 5.
B 12. Tomb 5; similar vessel in tomb 3.

Figs. 8 and 9:
C 1. Tomb 5.
C 2. Tomb 2.
C 3. Tomb 2; similar vessel in tomb 12.
C 4. Tomb 9; similar vessels in tombs 3, 8 and 10.
C 5. Tomb 7; similar vessels in tombs 1 and 8.
C 6. Tomb 12; similar vessel in tomb 3.
C 7. Tomb 3.

Fig. 10:
D 1. Tomb 5; similar vessel in tomb 3.
D 2. Tomb 3.
D 3. Tomb 3.
D 4. Tomb 3.
D 5. Tomb 1.
D 6. Tomb 3.
D 7. Tomb 5.
D 8. Tomb 2.

Fig. 11:
E 1. Tomb 3.
E 2. Tomb 5.
E 3. Tomb 3.
E 4. Tomb 5; similar vessels in tombs 3, 4, and 10.
E 5. Tomb 8.
E 6. Tomb 5.
E 7. Tomb 8.
E 8. Tomb 3.
E 9. Tomb 1.
E 10. Tomb 12; similar vessel in tomb 3.
E 11. Tomb 7; similar vessels in tombs, 2, 3, 4, 5, and 12.
E 12. Tomb 5; similar vessel in tomb 3.
E 13. Tomb 2.
E 14. Tomb 7.
E 15. Tomb 2.
E 16. Tomb 3.
E 17. Tomb 3; similar vessel in tomb 2.
E 18. Tomb 1.
E 19. Tomb 1; similar vessels in tombs 8 and 12.
E 20. Tomb 6.
E 21. Tomb 12.
E 22. Tomb 7.
E 23. Tomb 12.
E 24. Tomb 4; similar vessel in tomb 3.
E 25. Tomb 13; similar vessels in tombs 3 and 5.
E 26. Tomb 4.
E 27. Tomb 6.

Fig. 12:
F 1. Tomb 12; similar lamps in tombs 2, 3, 4, 7 and 8.
F 2. Tomb 1; similar lamps in tombs 5, 9, 10 and 13.
F 3. Tomb 3.
F 4. Tomb 12.
F 5. Tomb 3.
F 6. Tomb 2.
F 7. Tomb 3.
F 8. Tomb 3.

In conclusion, I would like to express my indebtedness to Mr. C. G. Zammit, for his help in the field, and for preparing the photographs and drawings with which this article is illustrated, and to the Director of the British School at Rome and to Mr. D. B. Harden, for many helpful suggestions in the course of its preparation for press.

J. G. BALDACCHINO

THE CAVE OF MANACCORA, MONTE GARGANO

Part 1: The Site

In presenting the material that is the subject of this paper, it should be stressed at the outset that this is in no sense a full excavation report. The circumstances of the excavation itself and of its interruption, the subsequent loss or destruction of much both of the material itself and of the records of its discovery, and the death of Professor Ugo Rellini, who conducted a part of the excavation—the combination of all these circumstances means that such a report can never now be written. Nevertheless, the intrinsic interest of the material that survives and the preservation by Dr. Baumgartel of her own excavation notes have seemed to justify a more limited publication; and the main purpose of the present article is to present a type-series of the pottery and of such of the other material as has survived, and at the same time to record something of its stratigraphy and of the observed chronological sequence.

This work would have been impossible without the generous and whole-hearted collaboration of the Istituto di Paletnologia of the University of Rome, where the surviving material is now housed, and of its Director, Professor Pietro Barocelli, who allowed a selected body of pottery to be removed temporarily to the British School for study and illustration. Thanks are due to the courteous help afforded by Professor Barocelli's assistants, Dottoressa Accanfora, Dott. Penna, and in particular by Dott. Salvatore Puglisi, who has himself done valuable work upon the contemporary cultures of the Gargano.

It is hoped that the second part of this report, covering the pottery and other finds, will be ready for inclusion in volume XXI.

Editor

The cave of Manaccora is situated on Monte Gargano between the little townships of Peschici and Vieste. My excavations within the cave were undertaken on three separate occasions between September 1931 and May 1933. They were the logical result of the previous excavations undertaken by the late Professor Ugo Rellini at Macchia di Mare (Comune di Vico), excavations in which I had in 1930 been allowed to participate. These excavations, undertaken with a view to ascertaining the age and cultural associations of a local flint-industry, known as the Garganian, had produced typical examples of this industry in association with pottery, some of it coarse, some of it burnished black or red, a few sherds with simple ornament scratched into the clay after firing, knobs in relief, handles with slightly raised edges, and a few coloured light fawn, but without any signs of painting. These associations showed that the flint-industry so far from being of mesolithic date, as had been suspected, belonged in fact to the Bronze Age, probably, as it then seemed, to an early phase of it; and it was with a view to locating, if possible, a later Bronze Age station, for comparison with the

FIG. 1.—SKETCH PLAN OF THE CAVE, AND DETAIL OF THE FUNERARY CLEFT.

fabrics found at Macchia di Mare, that I obtained from Professor Rellini permission to undertake further work in the cave of Manaccora, where he had himself undertaken some trial investigations the previous year. In this respect my hopes were disappointed. No fresh Bronze Age civilisation was discovered on Monte Gargano. Further work by Rellini's pupil and follower, Dott. Salvatore Puglisi, has since shown that the facies of Macchia di Mare, which he describes as Retarded Neolithic, prevailed throughout the Bronze Age and developed without a break into the Early Iron Age.[1] But if the original purpose of the excavation was not realized, it produced other results of the greatest interest; and it is these that form the subject of this report.

Professor Rellini had started excavations in the cave in the year before my arrival. Unfortunately neither diaries nor notes about his excavations seem to have survived, nor is it known what became of the material he collected. Two preliminary reports were published.[2] The material from my own excavation was taken first to the Museo Pigorini, where I was able to arrange it in its proper stratigraphical sequence, and later removed to the Istituto di Paletnologia of the University of Rome, where it is now housed. There, despite difficult conditions during the war years, the bulk of the pottery is still arranged in its original context. The bronzes on the other hand have inevitably fared worse in the fifteen years since excavation, and many are now destroyed or damaged beyond recognition.

For the possibility of returning to Rome for three months in the autumn of 1947, I am indebted to the British School at Rome, the Director of which, Mr. J. B. Ward Perkins, has supervised the preparation of the greater part of the illustration. Thanks are due also to Signora F. Bonajuto, who helped to check the lists and objects, and to Mrs. D. Wain-Hobson and Mrs. H. A. Hankey who made the drawings. A deep debt of gratitude is owed to Professor Barocelli, Professor of Paletnologia in the University of Rome, and to his staff, for all the courteous facilities afforded for my work; and to Dr. S. M. Puglisi, who has been entrusted with the care of Professor Rellini's unpublished material.

Before passing to the report proper, it will be well to note certain factors that have limited its scope. In the first place the plan prepared by the local surveyor and published in the second preliminary report[3] is so inexact as to be of very little value. The plan here reproduced (fig. 1) is accurate in so far as concerns my own trenches and approximate only in regard to the outline of the cave. The trenches dug by Professor Rellini had already been filled in before I started work. One of them adjoined the 'triangle' at the back, and one adjoined the trench which I dug at the cave-mouth; of the two others I know nothing. I have therefore omitted them from my plan. In the second place the excavations were never completed; and it has seemed advisable therefore to concentrate the time and resources available upon the publication of the material from that part of the cave, at the back, which yielded clear stratigraphy, and to omit that excavated with, and underneath, the skeletons in the cave-mouth. A few pieces

[1] S. M. Puglisi, 'Le culture dei capannicoli sul promontorio Gargano,' *Atti della Accademia Nazionale dei Lincei*, 8, II, 1950, pp. 3–57.

[2] U. Rellini, R. Battaglia and E. Baumgartel, 'Rapporto preliminare sulle ricerche paleo-etnologiche condotte sul promontorio del Gargano,' *Bullettino di Paletnologia italiana*, L–LI, 1930–1931, pp. 43–133: U. Rellini and E. Baumgartel, 'Secondo rapporto preliminare *etc.*,' *ibid.* LIV, 1934, pp. 1–59: cited hereafter as *Bull. Pal.* L–LI and *Bull. Pal.* LIV, respectively.

[3] *Bull. Pal.* LIV, pl. VI.

only from the latter site will be mentioned where they help to illustrate or to clarify problems offered by the material at the back. Finally the photography presented peculiar local difficulties and the results were not always satisfactory; the entire series of negatives subsequently fell into Nazi hands and is lost, leaving me only an incomplete series of prints.

THE SITE

The cave of Manaccora (fig. 1) lies in the flank of one of the limestone spurs characteristic of the northern shores of Monte Gargano.[4] It is light and lofty, about 48 metres long and 20 wide, and opens in a large arch on to a sandy cove, which might serve as a harbour for small ships. Entering the cave from the shore one has to climb a sand-dune about 4 metres high, which separates it from the sea. On the crest of it, even on the stillest day, a sand-whirl dances; and this may explain how a low dry-stone wall has been sufficient to keep the sand out of the cave itself. Right at the back a smaller, apse-like chamber, about 8 metres in diameter, opens off the main cave. Before excavation the roof of this annexe was barely a metre above the modern surface.

During the harsh winter months shepherds use Manaccora as a shelter for their flocks, and immediately inside the entrance are a number of stalls, built in the time-old dry-stone technique of the Gargano. The presence of these stalls effectively prevented any considerable excavation near the entrance; and somewhat further in from the entrance huge blocks of limestone fallen from the roof formed an equally effective barrier. The bulk of the excavation was therefore concentrated at the back of the cave, partly in front of and partly within the Annexe. Operations were subsequently extended by the discovery of a cleft leading off the annexe; and by the necessity of clearing and recording a chance find of skeletons near the cave-mouth.

Before turning to the individual discussion of these four sites, it will be useful to clear up one or two points affecting the stratigraphy of the cave as a whole. Over the whole of the back of the cave, except where disturbed by later, intrusive features, there was a clearly-marked division into three main strata, each divided from the next by a sterile layer, of variable thickness but averaging about 10 centimetres. These sterile layers were identified by Rellini as disintegrated limestone, the result of small falls from the roof during periods of temporary abandonment. Small particles were constantly falling from the roof during the work of excavation, and once a considerable boulder dropped. At the front of the cave these sterile levels were not found. There is however good reason to believe that the surface-level near the mouth was formerly a good deal higher than it is now. The walls are discoloured to a height of nearly four metres above the present surface; and some flat niches cut into the cave-wall a short distance above it, in a position that is now quite inaccessible, strongly suggest that the discoloration does in fact mark the line of the former surface. The subsequent lowering of the floor at the entrance may readily be explained by the need to provide more convenient access for the flocks that are its present-day occupants. A trench cut from the back of the cave to the mouth is needed before it will be possible to speak with any certainty. All the evidence available however suggests that the two sterile layers originally covered

[4] For the exact location of the site, see Puglisi *op. cit.*, p. 4, fig. 1; a photograph of the cave mouth is reproduced in *Bull. Pal.* LIV, pl. I, 2.

the whole of the cave; but that at the mouth they have later been quarried away, together with the two upper occupation levels, exposing the equivalent of what is, at the back, the third and deepest level.

Another recurrent feature is the layer of tumbled boulders that underlies the archaeological strata at the back of the cave and again at the mouth. Trial soundings at both points showed that this layer was more than two metres thick; and that below it was virgin sand, below this again water. Once more a trench linking the two sites is required for certainty; but it seems reasonable to suppose that it covers the bottom of the whole cavern, and that it represents a single, disastrous fall from the roof. The only part not affected by this fall was the little annexe at the end, the roof of which is in consequence several metres below that of the main cave.

(a) *Site I: at the cave-mouth.*

The first of the four sites to be described, though not the first to be excavated, lay at the entrance to the cave, against the west wall. Here workmen engaged in filling some of the previous excavations came upon human skulls and bones a short distance below the surface, and a brief examination showed that these were part only of a considerably larger deposit, the excavation of which must, from its exposed position, be considered a matter of urgency.

The soil at this point proved to be composed of loose sand mixed with large stones and very difficult to excavate in a tidy manner. I began by clearing the space where the skeletons had come to light, and it soon became apparent that immediately behind the exposed skeletons the lower part of the cave-wall formed a shallow recess or grotto. This recess was followed outwards towards the sea for a distance of 6 metres, to a point beyond the dry-stone wall that closes the cave-mouth; and in the other direction trenches were dug southwards towards the interior of the cave to connect up with the site of a trench previously dug by Rellini. Rellini had not observed any human remains in his excavation, and this point may be taken therefore to mark the southward limit of the burials.

The skeletons at first exposed lay together in a single large heap intermixed with sand and stones. The bones were extremely fragile; and though in many cases parts of the original articulation could be observed, particularly the spine, accompanied in one case by the leg-bones, I was unable to free a single whole skeleton. One hand often lay near the head. In all I counted 20 skulls from the central heap. More bones seemingly in wild disorder, were found at the same level in the trench running south towards the interior of the cave. In the recess, on the other hand, where we found our first bronze knife,[5] we found part only of a single skeleton.

The skeletons themselves showed no traces of burning; but mixed up among them were many sherds and fragments of charcoal. It is by no means certain that all of these were contemporary, for the deposit lay very near to the surface, without the protection of the sterile layer that sealed the similar finds at the back of the cave. Thus, though the bulk of the sherds resembled those from the deepest layer at the back, they included also three painted 'Daunian' sherds characteristic of Stratum II in the 'Triangle'

[5] *Bull. Pal.* LIV, pl. X, 2.

(p. 29). In addition to the sherds, this upper level produced a few bronzes also and some blue glass beads.[6] The latter were found in close association with tubular bronze beads made of wire wound into the form of a coiled spring, part evidently of a necklace.[7] The bronzes included a pair of bronze double spirals of a form characteristic of Manaccora. These consist of two flat spirals linked by a wire wound into a coil, about 15 mm. long and 7·5 mm. diameter. These double spirals always occurred in pairs, and their function is obscure. They were certainly not fibulae, for there is never any trace of a needle. The only parallels known to me are in the Museum at Zara, where also they are found in pairs. Other bronzes found with the skeletons include thin bronze discs, which may have belonged to earrings as they were found near the head and in one case had stained the temple of one of the skulls; simple rings like wedding rings, of which one was later found in place on a finger-bone; and buttons, like cones with a loop at the back, the presence of which accounts no doubt for the rarity of brooches at Manaccora.

On the removal of the first heap of skeletons, others were found beneath, again mixed with sand and stones and this time extending into the recess. The condition of the bones and of the accompanying bronzes grew progressively worse as the excavation went deeper, and it is difficult to give an exact estimate of the number of bodies represented. There were at least fifty, if not more, and apart from the single skeleton of a child which lay near the pelvis of an adult, all the identifiable remains were those of adults.

The bronzes buried in these deeper levels varied little from those already described, the only exceptions being two daggers and part of an arm-ring. The daggers were found at depths of 0·97 m. and 1·17 m. respectively. The better preserved of these had a blade with a shallow mid-rib and a tang with raised edges and wider at the base than the blade. The handle, of wood or bone, had been fixed by bronze rivets, of which two were preserved in the base of the tang and one in the middle. The arm-ring was found at a depth of 1·00 m. in the recess and consisted of two ribbons, each ending in spirals, of which the heads are intertwined. A few cups, which, in striking contrast to most of the pottery, were found intact, were presumably tomb-furniture. They were shallow bowls with a wide handle perforated by a hole.

Continuing deeper in the trenches in front of the recess and inwards towards the interior, after the last of the skeletons had been cleared, we found a layer of sand, which included plenty of sherds, together with bone awls, spindle-whorls and clay bobbins. There were two fragments only of bronze, the one a bead similar to those found with the skeletons, the other part of a pin. Of iron, apart from spots of reddish-brown colour which might have represented the oxidised remains, there was no certain trace either in this or in any other level at Manaccora. Indeed the physical conditions are such that it could hardly have been expected to survive. On the other hand the absence of flint implements from the occupation-levels proves conclusively that the people of Manaccora had implements of metal; and bronze was too expensive a commodity for every-day use.

The first well-preserved hearth appeared in front of the recess at a depth of 2·25 m.

[6] These beads, which were corroded white at the outside, were analysed by the department of chemistry, University of Rome.

[7] *Bull. Pal.* LIV, pl. XII, 9.

It consisted of a layer of burnt clay resting on pebbles, and on it were charcoal and ashes. It was evident, both from the hearths and from the material finds, that this layer represented the remains of a settlement occupied immediately prior to the burial of the bodies. It extended downwards to the layer of large boulders (see p. 27) and must have belonged to the first settlers to venture in after the collapse of the cave-roof. The advantages of cave-life are many in an exposed territory such as Monte Gargano, and caves are still occupied as dwellings in some of the communities. The cove on to which Manaccora opens may well have served in addition as a harbour for the cliff-top settlement above. It is important to note that Manaccora was not in the first instance a burial-place, but that it was a habitation-site in which bodies were buried at a moment of emergency. It is futile to speculate on the nature of the catastrophe that caused the death of over fifty people at one time, not to speak of the further burials that were found later at the back of the cave. That the skeletons in the entrance belonged to the stratum in which they were buried is clear from the pottery found with and underneath them. Moreover, as will be seen from the second part of this report, the pottery and bronzes that were found associated with the skeletons substantially repeat the forms found with the burials in the interior of the cave. There can be little doubt that the whole forms a single, uniform series.

(b) *Site II: the back of the cave.*

Before the discovery of the burials at the cave-mouth claimed our attention, work had already begun at a point near the back of the cave, in front of the annexe. For practical reasons the initial trench was triangular, with a right angle towards the cave-mouth and the two adjacent sides 2 metres and 9 metres long respectively (fig. 2). The shorter side, towards the East, was sited to avoid ground already dug by Rellini. For convenience of digging the triangle was subdivided into three smaller trenches; and when these had been cleared, the north face revealed a clear and complete cross-section of the archaeological strata present in Manaccora (fig. 3).[7a]

The section as it showed in the north face of the triangle comprised three archaeological layers, each divided from the next by a sterile layer, of about 10 cm. average thickness, representing the accumulated debris of disintegrated limestone fallen from the roof during periods when the cave was not occupied (see above, p. 26). With a few exceptions, due to later disturbance, these sterile layers were found consistently in all the trenches dug at the back of Manaccora. At the west end of the triangle a large hole had been dug in Hellenistic times, piercing the upper sterile level and reaching down nearly to the base of the intermediate occupation-level. It was later found to extend into the annexe also (see p. 34), where it had in places pierced the lower sterile layer also; but as it was filled with black soil, which stood out in sharp contrast to the lively colours of the stratified deposits, there was no difficulty in isolating the intrusive material. A second, but smaller, disturbance was found in the middle trench of the triangle, where a hut-foundation belonging to the intermediate occupation-level had penetrated the lower sterile layer over a small area. With these exceptions the division between the successive occupation-levels is clear and continuous, and it is this rigid stratigraphy that gives Manaccora its unique value to the archaeologist in a district where stratigraphical evidence is rarely forthcoming.

[7a] The originals of the sections drawn in colour, and which were redrawn in black and white for the purpose of reproduction are in the British School at Rome.

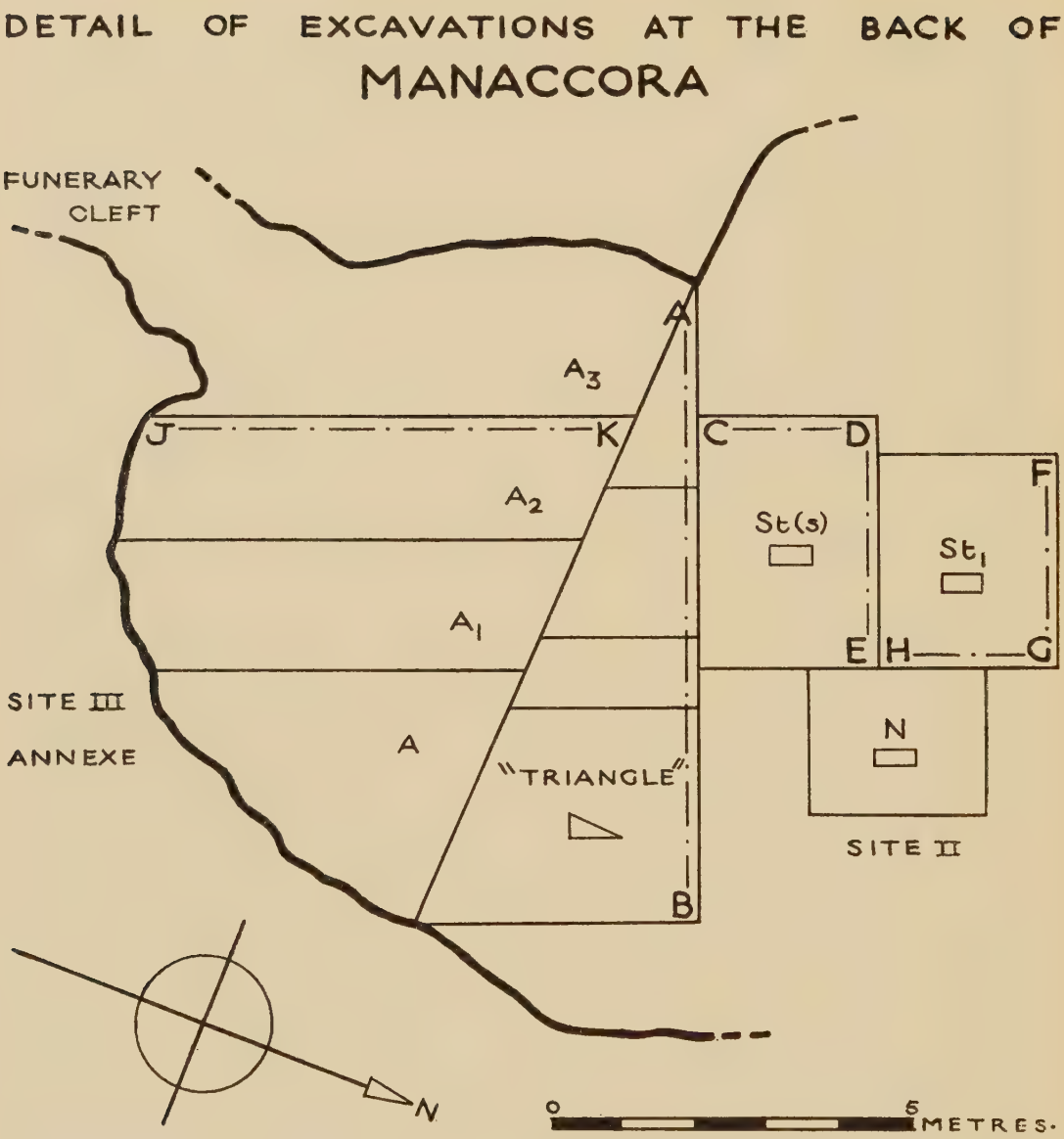

FIG. 2.—PLAN OF THE EXCAVATIONS AT THE BACK OF THE CAVE.

The excavation of the triangle revealed traces of a structure in the intermediate occupation-layer, extending northwards, an orderly arrangement of large stones found between 3 and 7 metres from the NE corner of the trench. This proved to be part of a stone circle, so far unique in Manaccora. To follow it, the excavation was extended northwards, the trenches being sited with a view to avoiding the eastern limits of the large, Hellenistic disturbance noted in the previous paragraph. In this we were only partly successful as in both the first two trenches (fig. 2, St(s) and St(1)) the lower levels

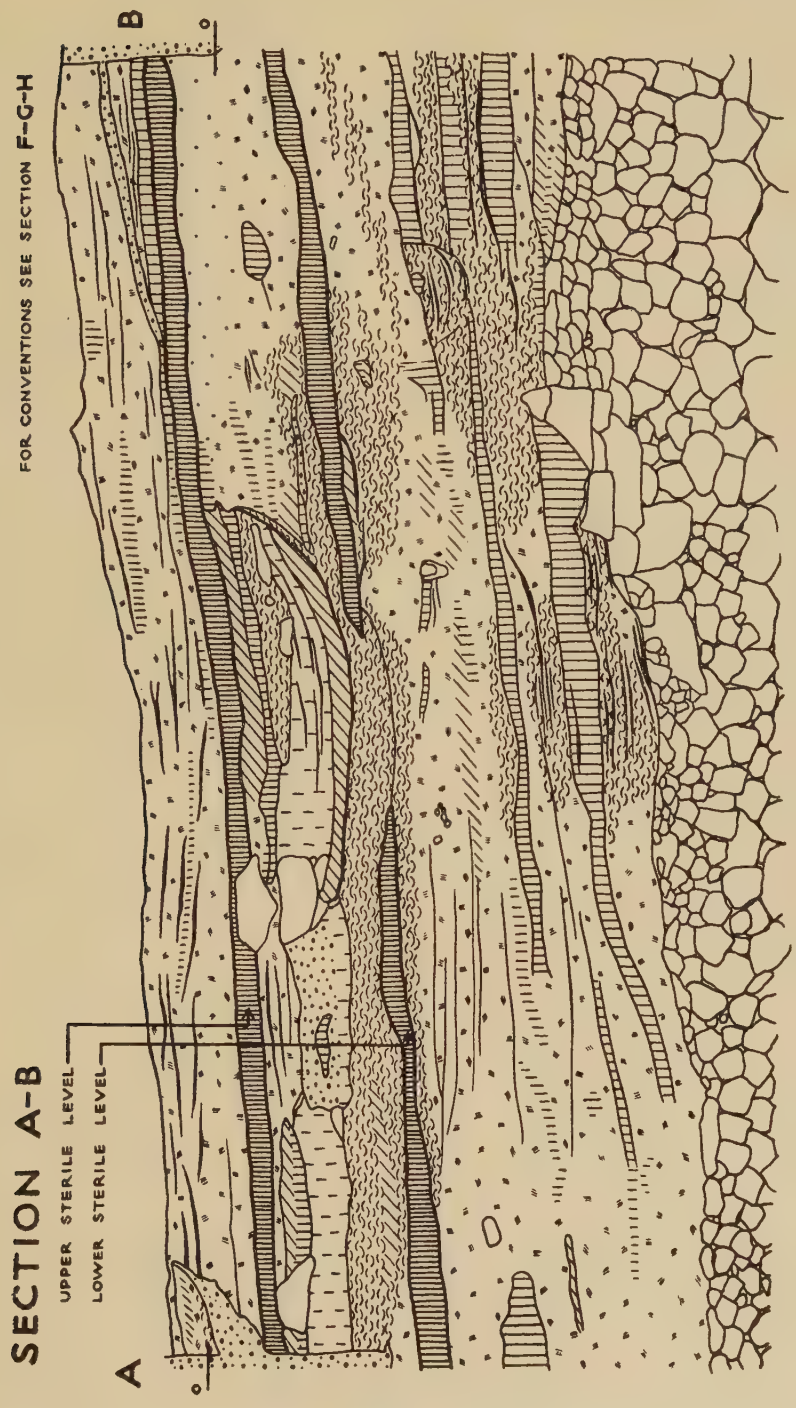

FIG. 3.—SITE II: SECTION OF THE NORTH FACE OF THE 'TRIANGLE'.

were intact, but the upper levels were found to have been disturbed. At the NW corner of St(1) the disturbance, though shallow, was still continuing. It was only in the third trench (fig. 2, N), to the east of the first two that the upper sterile level was found intact, and that we were able to secure therefore a considerable body of securely sealed material belonging to the intermediate occupation-stratum. The lower stratum was left unexcavated in this trench, sealed by the lower sterile level and safe for future excavation. Whilst working in the trenches St(s), St(1), and N we discovered that the intermediate occupation-layer consisted of shallow pits about 4 m. in diameter,

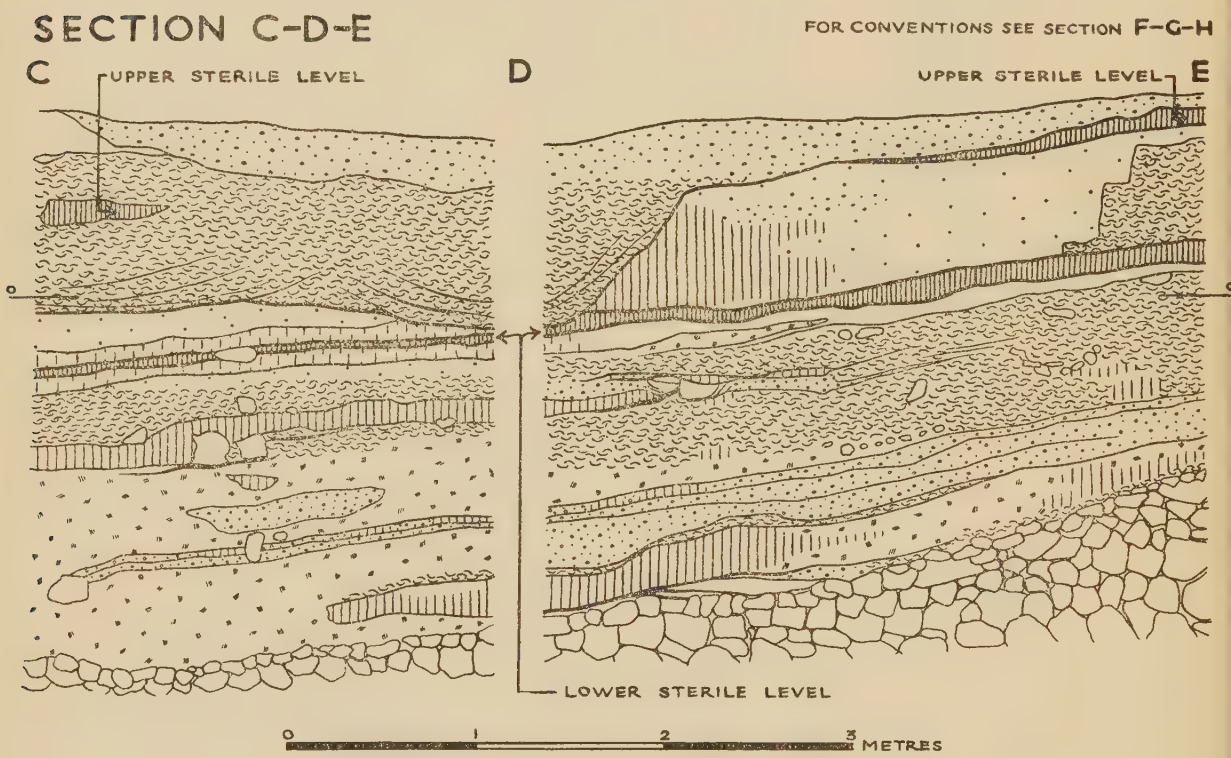

Fig. 4.—Site II: Section of the West and North Faces of Trench St(s).

and filled with the debris of daily life. They had hearths in their centres. The pits were close to each other, separated by small walls of packed boulders. Their outlines showed clearly on the sides of our trenches (fig. 3). No signs of superstructures were found. They might have been built of flimsy material long since perished or thought to be unnecessary inside a cave which afforded protection against inclement weather. The pits extended towards the triangle, but one only intruded into it. It was deeper than the others, and had pierced the second sterile layer in one point.

(c) *Site III: the Annexe.*

The next site to occupy our attention was the Annexe (fig. 2). Our immediate purpose was to isolate and to examine the large Hellenistic disturbance already en-

countered on the previous site; and to follow the stone circle exposed in the intermediate occupation-stratum of the triangular trench. I was anxious also to see whether the Annexe was in fact the end of the cave, or whether, as the workmen maintained, there was communication with other caves in the district. In a limestone country such

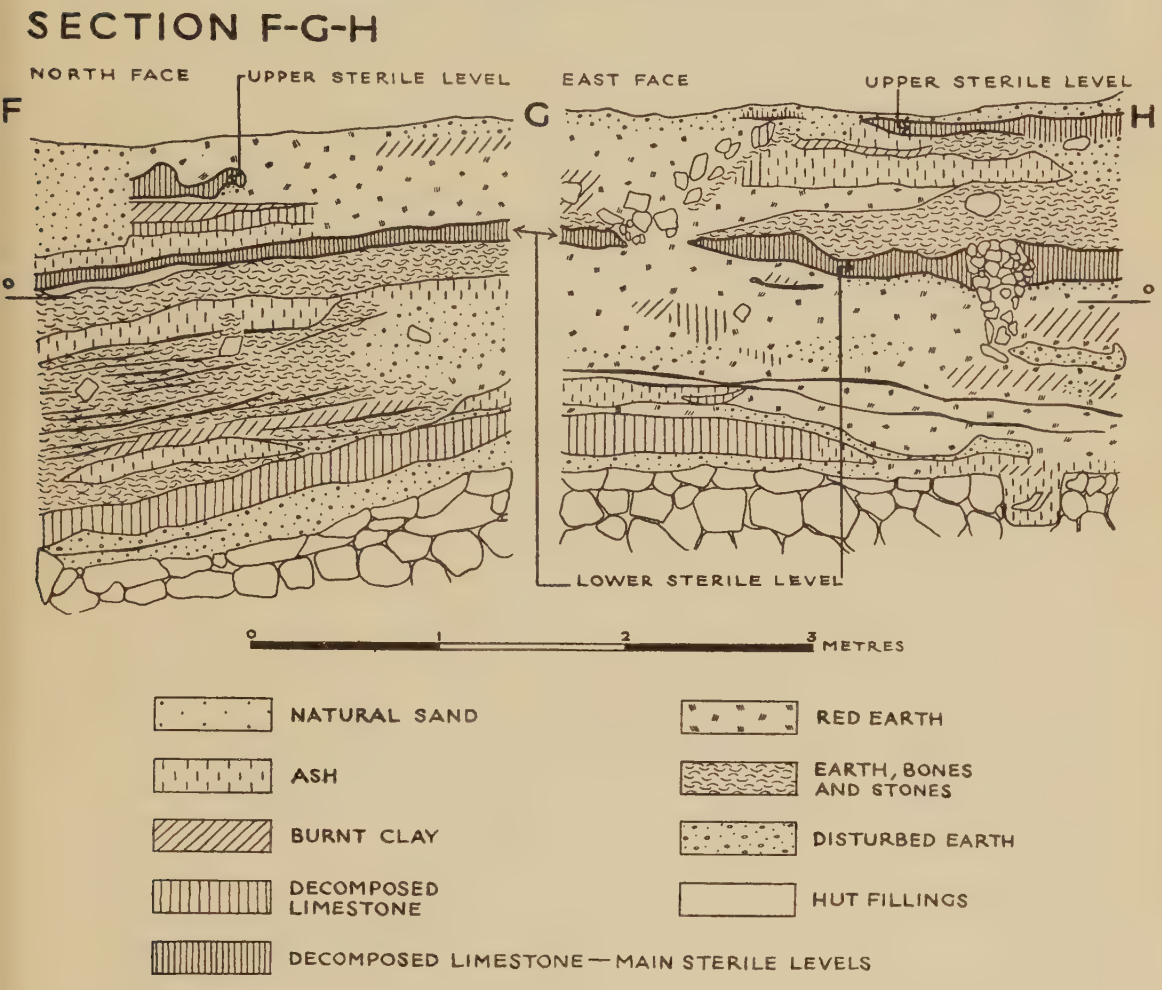

FIG. 5.—SITE II: SECTION OF THE NORTH AND EAST FACES OF TRENCH ST(1).

as this, riddled with caves and rich in the remains of a distant past, it is inevitable that popular imagination should seize upon tales of subterranean passages, peopled by fabulous beings guarding imaginary treasures. For once the event was to justify these fantasies.

The plan of the Annexe is roughly semi-circular, the base being the long side of the triangular trench of the previous site and the circumference the rock-wall of the cave. For purposes of excavation it was divided into four sections, numbered from east to

west A, A1, A2 and A3, and each divided from the next on a line parallel with the short side of the triangular trench.

It soon became apparent that in the Annexe the upper sterile layer, if it had ever existed, had been destroyed by the large Hellenistic excavation. This grew progressively deeper towards the east, and at the east end it had destroyed in parts the lower sterile layer also. In it was found a certain amount of fragmentary hand-made pottery, but this may well have belonged to the destroyed earlier levels, and the only finds that could be attributed with certainty to the latest phase were numerous fragments of amphorae.

Trench A was the first to be cleared. In this trench undisturbed occupation-material was not found until well below the level of the lower sterile layer. On the other hand the large blocks found at the bottom of the adjacent trenches in the cave proper were here absent, and the archaeological strata only finished at a depth of over 4 metres. In the next trench, A1, the half of a human skull was found at a depth of 1·15 m. There were no associated bones, and the soil in which it was found was still the fill of the Hellenistic excavation, black and mingled near the rock walls with limestone splinters. The underlying, undisturbed strata were red, plentifully mixed with layers of ashes in the deeper levels and rich in the debris of human occupation. A description of the material finds will be found in part II of this report. The hearths, of which we found several, had been carefully constructed of a layer of clay, burnt red by fire, on a basis of pebbles. In the rock wall at the back of the Annexe were several small niches, and in one of these, shaped like a slot and 1·40 m. deep, at the junction of A1 and A2, were the skulls and some of the bones of infants, some so small that they might have belonged to a foetus, in all belonging perhaps to three individuals.

It was while excavating A1 at a depth of just over 3 metres that we made a dramatic discovery. The workmen were removing from the wall at the south end of the trench some loose rocks that were in danger of collapsing, when the soil next to the wall gave way, exposing the beginning of a passage. The opening was just large enough for the most enterprising of the boys to slip in; but he soon returned, too frightened to give any coherent account. He was followed by one of the workmen, who after a time returned carrying a bronze sword. He too was too excited to describe clearly what he had seen; but it was evident that we had made an important discovery, and I had the hole enlarged to enable me to crawl through myself. After passing 17 metres of what seemed at the time to be a narrow passage, I found myself at the entrance to a somewhat wider chamber, the end of which remained invisible in the dark. Against the rock wall my torch picked out human skulls. Next to each stood a drinking cup, and several swords and daggers were disposed on the ground. I did not dare to enter for fear of disturbing the remains. The photographs which I took are not clear enough for reproduction, but for me they still hold something of the first sombre impression of the day of discovery. We had found another mass burial; but this time the remains were those of important personages. They had not been thrown into a heap and covered with earth and stones, but laid carefully to rest, each one provided with his drinking cup and personal belongings. Until we came, nobody had disturbed their rest, and the only damage done to them had been that wrought by damp and an unkindly soil.

It seemed wiser to defer excavation of this funerary cleft until work in the Annexe should be complete, and the entrance was temporarily sealed with a wall of dry stone.

Virgin sand soon appeared in A1 at a depth of 4·40 m., and we turned to A2. Here, immediately below the lower sterile layer, at a depth of 1·85–1·90 m. near the rock face, we found some bronzes. These were beads made of bronze wire similar to those found with the burials at the entrance to Manaccora, a plain bronze ring, and two spirals with the ends bent back to form a hook, which may have been ear-rings or else

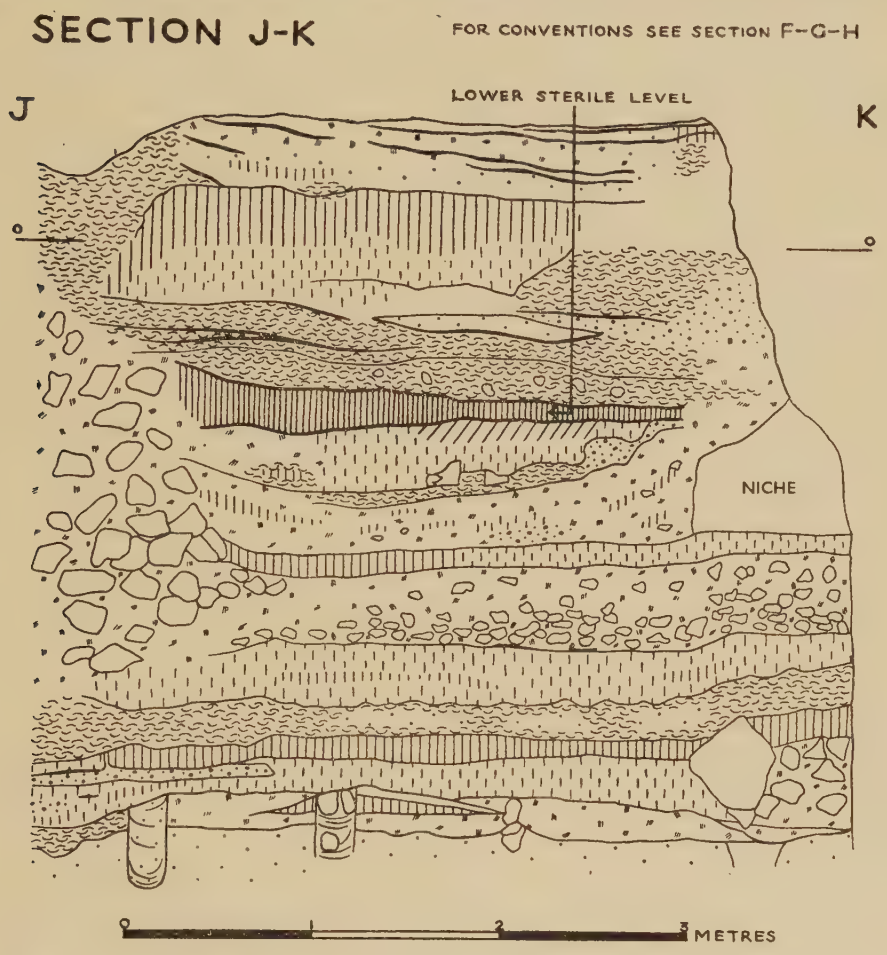

FIG. 6.—THE ANNEXE (SITE III): SECTION OF THE WEST FACE OF TRENCH A2.

the broken parts of a double spiral finger ring.[8] Next to these bronzes were human bones. There were many hearths, many of them no more than fire-reddened patches of soil, covered with ash. The plentiful pottery included several well preserved small cups with high, ribbon handles or mace handles. There were also bone points, made from the long bones of small animals, some of them polished to a brilliant black. The technique is still preserved in Apulia, where polished, black rabbit bones are used to make the stems of pipes. The finds included spindle-whorls of a variety of

[8] *Bull. Pal.* LIV, pl. XII, 6.

forms, some of them very carefully made, and facetted pieces of brightly polished black pottery. The latter may have been beads, as we had found similar objects with the burials at the cave-mouth.

It was in this trench, at a depth of 2·55 m., resting in one of the hearths, that we found a terracotta mould, perhaps for the casting of an ornamental plate. Another mould had previously turned up in the deepest stratum at the east end of the triangular trench. This was for a small axe with a stop-ridge, broken unfortunately immediately above the ridge. In neither case was any trace found in Manaccora of objects which might have been cast in these moulds. Indeed no axe of any sort came to light.

Below the level that produced all this archaeological material was another, very different in character, running from about 2·80 to 3·30 metres deep. The soil was darker, mixed with pebbles and very damp. There were few sherds but many animal bones and among them two human jaw-bones. As we cleared towards the back wall of the Annexe we found that what we had previously believed to be the entrance to a passage leading to the tomb-chamber beyond was in fact the back of the Annexe, curving away under the rock to form a sort of 'abri sous roche', and that the tomb-chamber opened directly from the south-west corner of the Annexe. The overhanging rock had sheltered the part beneath it from the infiltration of earth from the cave, and this in the course of time had piled up, leaving a passage free through which we had been able to creep. As we discovered later, this sheltered part against the rock had also been used for burials. The floor consisted of a solid mass of human bones, mingled with chips of rock, earth, and remnants of tomb-furniture similar to that found with the burials at the cave-mouth.

Working downwards in A3 and clearing the rock-face at the back, we found more shallow cracks and niches that had been used for burials. They ranged in depth from 2·90 to 3·65 m. In, and in front of one of these, which ran from 2·40 to 3·65 m., we found a heap of skeletons similar to those at the cave-mouth. In another place a pyramid of six skulls had been built against the wall.

At a depth of about 3·50 m. the character of the filling again changed. Below this point it consisted of ashes mixed with bones of animals and some stones but containing very little archaeological material. About half-way down the deposit was a thin layer of earth. These ash layers extended into A2. Beneath the ash were the remains of a stone pavement, about half of which appeared to be still in position in A2 and A3, ending in A2 in a segment of a circle, which stretched across the trench from north to south. At the edge of this pavement, in A2, were two small hearths, but these were much too small to be connected with the overlying deposits of ash, which appear rather to be the result of two successive large fires which covered the greater part of the Annexe from west to east.

From the level immediately below the pavement, the deepest in the Annexe, posts had been driven into the virgin sand beneath. The posts (pl. IV, 2)[9] had been removed in antiquity, for there was no trace of wood preserved, and the holes had filled in with rubbish from the stratum above, which stood out black against the white of the sand. These posts were massed about the entrance to the tomb-cave. It is possible that five of them supported a fence across A2, but otherwise it was impossible to

[9] Cf. *Bull. Pal.* LIV, pl. VII, 2.

detect any orderly arrangement. One of the posts had fallen, leaving a mark about 70 cm. long, and a similar length was indicated for another which had been driven in close against the rock face beneath an overhanging stone. The purpose of these posts cannot be determined with certainty, but they probably had something to do with the tomb-cave or with a burial ceremony connected with it. Certainly they did not stand in place for long, as they were discarded before the stone paving was laid.

In the south-west corner of A 3, at a depth of 4·24 m., was another small niche in the rock. In it were two cups and a pitcher, of which the cups were already broken when deposited. We found later that this niche communicated with the tomb-cave, and the vessels may well have contained offerings to the dead.

Having completed the clearance of the body of the Annexe, we turned our attention to the part lying immediately in front of the entrance to the tomb-cave. This we found had been closed in antiquity by a small dry-stone wall, reaching to about half the height of the entrance. Against it lay another heap of skeletons and earth, and in a corner between this heap and the rock a deposit of 'loom-weights', stacked in three rows of three, the one reversed upon the other. They were of unbaked clay, conical and perforated near the tip. Other 'loom-weights' found elsewhere in the excavation were all of pottery, and included both conical and pyramidal forms, pierced some with a single hole, others with four holes running from top to bottom. From the pile of skeletons we extracted some of the small cups, which were by now familiar, also bronze rings and buttons, often several together, double spirals, and ornamental pins. A new item was a thick bronze wire, coiled like a serpent, which seems to have been the upper part of a 'fibula serpeggiante'; near it was found part of the needle. On the stone wall itself we found some bones, which had perhaps spilled over from the heap in front and a sword, which had been laid crosswise to the wall, as if intentionally.

(d) *Site IV: the Funerary Cleft.*

When the last barrier had been demolished, we found ourselves inside the inner cave at its widest part, where it measured just under 3 metres from wall to wall. Almost immediately in front of us it bifurcated, the shorter branch leading to the left, the longer to the right to a distance of 10·60 metres. Even after all the earth had been cleared from the entrance, it was still dark, and the work had to be done by lamp-light. To our right we could see six skulls, opposite us three more, and on the left three skulls and a jaw-bone. Between the skulls on the right lay two long swords, with the group in front were two swords and two daggers, and with those on the left two swords and a dagger. Two small cups stood in the entrance next to the bones of several persons, and similar cups accompanied many, but by no means all, of the skeletons. In the plan that I made (fig. 1), each cup received a number and each of the major bronzes a letter. There were too many rings, buttons and tutuli (up to 36 with a single burial) for individual numeration.

It was not easy from the disposition of the skulls to see how the corpses had been laid. They had not been covered originally and very little earth has since filtered in; but the cave is damp and the bones had sunk into the ground, and many of them disintegrated. No single skeleton could be isolated intact. From the position of the

hands, however, near the head, and from the angle between the femora and the bones of the lower extremities, it would appear that the bodies were flexed: indeed in the narrow space available an extended position would have been impracticable. Towards the front of the cave the skeletons lay close to each other: they may even have been laid out in two layers; and there is the possibility of disturbance by later intruders. Towards the back of the cave the skeletons were more widely spaced; but the whole space had been used, and right at the furthest point we found the bones of a hand still wearing a finger-ring, and a broken armlet and some buttons.

The bronzes were all very friable, many of them reduced to powder or to a green smear. There was no trace of iron, which would not in any case have had any chance to survive. The tomb-furniture, which will be described in part II of this report, was far richer than that found at the cave-mouth. There were a number of new features: arm-rings, new types of bronze sword, of long pins and of double spirals. Besides the glass beads there were two of amber; and one of the small cups, with a curvilinear pattern filled with white, calls for special mention. The state of the skeletons precluded the determination of their sex, but the number of swords and daggers suggest that the majority at any rate were men. There were no children. The bones of one animal, probably an ox, were found in the entrance, near cup 4, beside the remains of an unusually massive individual.

In the wider part of the tomb-cave there were a few sherds of pottery found beneath the skeletons, all of types familiar from the deepest stratum of the Annexe. A handful of flint flakes, all rough, and seemingly struck from the same nodule, may have served to light a lamp during the burial ceremony. The sherds were probably refuse strayed from the deepest layer of the Annexe, which itself had at this earliest stage served probably as a refuse-dump rather than a dwelling.

It has been suggested that under the skeletons in the tomb-cave was found a stratum of Macchia di Mare type. This is erroneous. Neither pottery nor flints of the earlier culture were present in these, nor in any other of the excavations in Manaccora. The only exceptions are a single bifacial flint found in front of the pile of skeletons at the entrance at a depth of 2·32 m., and another in the main cave. It is impossible to dissociate the burials found in Manaccora from the earliest occupation-levels, among and on which they lie. It is stratigraphically certain that the burials within the tomb-cave and the heaps of bodies piled against the wall that closes it are approximately, if not indeed absolutely, contemporary; for both are securely sealed by the layers of ashes in the Annexe; and the identity of the material finds associated with the latter group and with the burials in the cave-mouth shows that the last-named also must be associated with the same dramatic events. The tomb-furniture in the inner cave is richer and more elaborate than the rest, but many of the types are identical, and the difference must be social rather than chronological. Stratigraphy, the material finds and the inherent probability of the circumstances, all converge to show that the three main groups of burials belong together, and to associate them with the earliest settlement of which Manaccora has yielded any trace.

ELISE BAUMGARTEL

THE LAMPAS PAINTER[1]

THE artist I call the Lampas painter painted the torch-race on the mug in the Karlsruhe Museum that Blümel reproduced on plate 134 of his book *Sport der Hellenen*.[2] Though I have found it difficult to place the style of the Lampas painter within the whole production of Apulian vases with certainty, I have no doubt that it is Apulian.

Sir John Beazley first pointed out to me that the style of the mug in Karlsruhe was identical with that of the mug Oxford 1934.17. Later I came across two more vases, which, I thought, should go with those in Karlsruhe and Oxford. One was in Truro, the other in Reading. I compared photographs of them with Blümel's reproduction of the Karlsruhe vase and photographs of the Oxford vase, and came to the conclusion that they were all painted by the same hand.

This is a short description of the subjects represented on the four vases by the Lampas painter known to me:

1. Mug (oinochoe shape VIII B). Karlsruhe Museum. Pl. V, 1, after Blümel, *Sport der Hellenen*, 115, pl. 134. Three naked youths in torch-race. On either side of the first racer a post. Height 125 mm.
2. Mug (oinochoe shape VIII B). The Reading Corporation Museum and Art Gallery no. 25.50. Pl. V, 2–4. Woman reclining and Eros holding wreath and dish. On the right-hand side laver, and above it flying bird. In the field, wreath. Height 125 mm.; diameter 112 mm.
3. Mug (oinochoe shape VIII N). Oxford 1934.17. Pl. VI, 1–3. Woman bouncing ball and holding tympanon.[3] On the left-hand side, bird flying and holding wreath in its claws. Plant on either side of the woman. Two fillets in the field. Height 90 mm.; diameter 80 mm.
4. Mug (oinochoe shape VIII N). Truro, The Cornwall County Museum. Pl. VII, 1–2. Youth chasing deer and holding tympanon in one hand and three ivy-leaves (?) in the other. Musical instrument and wreath in the field. Height 95 mm.; diameter 85 mm.

[1] This article is a small part of a wider work on Greek South Italian vases, which I carried out as a research student of University College, London. The vases here discussed belong to different Museums outside London and I should not have been able to study them without the financial assistance of the Central Research Fund of the University of London, which provided for my travelling expenses and those incurred for photographs.

My thanks are due to Mr. D. B. Harden, Keeper of the Department of Antiquities of the Ashmolean Museum, for permission to publish the vases in Oxford; to Mr. W. A. Smallcombe, Curator of the Reading Corporation Museum and Art Gallery, for permission to publish the Reading mug, and to Mr. George Penrose, Curator of the Cornwall County Museum, for permission to publish the Truro mug.

I am very grateful to Professor T. B. L. Webster and Professor C. M. Robertson, who kindly helped my work by discussing problems with me and correcting various errors in my manuscript. I am also very grateful to Sir John Beazley, who read my manuscript throughout and proposed various corrections, which I have adopted.

[2] I know of no other representation of a torch-race on a Greek South Italian vase.

[3] A woman bouncing a ball is represented on an Apulian oinochoe in Altenburg (see *Ze tschrift für Kunst*, 1950, Heft 3, pp. 185–6, figs. 157–8), to which Sir John Beazley kindly drew my attention.

The favourite shape of the painter, so far as is known, is the mug.[4] His vases are divided into two types: (*a*) that of the Karlsruhe and Reading mugs, which I call oinochoe shape VIII B; (*b*) that of Oxford 1934.17 and the vase in Truro, which I call oinochoe shape VIII N. The first type is more squat than the second; the transition from body to mouth is not direct but carried out through a well rounded shoulder and a rather high neck. The lip of the mouth is rolled downwards. The vases of this type have a foot in two degrees with the transition from body to foot furrowed; their handles are double rolled and knotted. The second type is more elegant than the first; it has no shoulder or neck, and the mouth, which spreads upwards, grows directly from the body. The vases of this type have no foot and their handles are double rolled but not knotted.

So far as one can judge from the small number of known vases by this painter, the patterns he uses are of two sorts, according to the two shapes of his mugs. Thus the vases in Karlsruhe and Reading have similar patterns: a laurel to the right (with dots between the lower leaves) on the neck, an egg-pattern with dots on the shoulder, and a stylised wave-pattern beneath the figure-work and the floral ornament.

The Oxford and Truro vases are decorated with patterns different from those on the two other mugs: a dotted egg-pattern above the figure-work not extending to the surface above the floral ornament and behind the handle, and a stylised wave-pattern (with a thin reserved band) below the figure-work and the floral ornament. Both have a second wave-pattern on the top surface of the mouth.

The youth on the Truro vase is not unlike the torch-racers represented on the Karlsruhe mug,[5] but on the latter the lines indicating the details of the bodies are more angular. The figures on both vases are running to the left. Their heads and right legs are in profile, while their bodies and left legs are represented in three-quarter view.[6] The chests are short and broad and the clavicles, omitted on the last racer of the Karlsruhe mug, are, in two cases, indicated by a rather arbitrarily drawn single line. The youth on the Truro mug and the third torch-racer of the Karlsruhe vase have their breast-lines represented, while the right breast-line of the second torch-racer of this vase is omitted. Thick dots are used for the nipples and navel, but the genitals are treated differently on each separate figure.[7] The right hand of the youth on the Truro vase resembles the right hand of the woman on Oxford 1934.17; his patellae are

[4] To my knowledge there are three different types of Apulian red-figured mugs (I am aware of the difference between corresponding shapes of Attic and Greek South Italian vases; but, wherever possible, I call the latter after Beazley's names of the former):

(*a*) The oinochoe shape VIII B, to which belong vases such as Bologna, Pellegrini *PU.* 694, *C.V.* III, IV Dr, pl. 32, 16; Taranto *C.V.* I, IV dr, pl. 16, 3–4; Copenhagen inv. 4813, *C.V.* VI, pl. 265, 2; Cracow, Czartoryski Museum inv. 1454, *C.V.* II, pl. 16 (Pol. 70), 2.

(*b*) The oinochoe shape VIII M, to which belong vases such as Brunswick AT 687, *C.V.* pl. 40, 3–4 (with this compare the shape of the Attic vase Oxford 1928.30, *C.V.* II, pl. 65, 1).

(*c*) The oinochoe shape VIII N, to which belong vases such as Toronto 383, Robinson and Harcum, pl. LXVII and Copenhagen inv. Chr. VIII 14, *C.V.* VI, pl. 265, 5. With this compare the shape of the Attic vase Athens NM. 1631, Wolters, *Zu griechischen Agonen*, p. 5, fig. 1.

Misses Richter and Milne call the Attic mug a cup. This seems to me rather confusing: apart from the fact that the term is now commonly used to indicate the kylix, it is used by the same authors so broadly as to include even two shapes of vase without handles (see *Shapes and Names of Athenian Vases*, p. 31, figs. 185–8).

[5] The Eros on the Reading vase is treated in a slightly different way.

[6] For the representation of left legs in three-quarter view see especially the first torch-racer of the Karlsruhe vase and the youth on the Truro mug. The right leg of the Eros on the Reading vase resembles the right legs of the torch-racers, while the corresponding leg of the youth on the vase in Truro is more bent.

[7] The genitals of the Eros on the Reading vase are also peculiarly treated.

indicated by curved lines, while those of the two racers on the Karlsruhe vase and the Eros on the Reading vase are more angular. A curved line on the right leg of the youth on the Truro vase indicates the edge of the shin-bone, while the ankles are omitted on all the male figures. Characteristic are the lines separating the legs from the feet.[8] It would be difficult to compare the face of the youth on the Truro vase with those of the torch-racers or the Eros on the Karlsruhe and Reading vases. The mouth of the second racer on the Karlsruhe vase is not unlike that of the third. The necks of both are comparatively long, but the youth on the Truro vase and the Eros on the Reading vase have very short necks. There is a horizontal line at the top of the youth's throat on the Truro mug; this appears again on the second and third racers of the Karlsruhe vase, but moved a little towards the middle of their necks. The hair of the figures on both vases is represented as a mass; that of the Eros on the Reading mug is covered by the sort of kekryphalos worn by female figures on all the known vases by this painter.[9] All male figures wear radiate stephanai,[10] and those on the Karlsruhe and Truro vases have a ribbon slung over the right shoulder.

The torches held by the racers are not unlike the torch, which the middle racer holds, on the obverse of an Attic red-figured bell-krater by the Kekrops painter in San Simeon (*ARV.* 853,3); i.e., they are almost entirely consumed.

The female figures on the Oxford and Reading vases resemble one another;[11] both wear a belted, sleeveless chiton, striped down the centre and bordered round the edge.[12] Their hair is covered by similar kekryphaloi (which seem to consist of scarf-like pieces of cloth wound round it), with a chignon jutting out behind and a tuft left uncovered on the temple. Both wear radiate stephane, bead earrings and bracelets. The head of the Eros on the Reading vase is treated similarly to those of the women, except that he has no earrings. His wrists are decorated with bracelets.

The bird on the Reading vase is not unlike that carrying a wreath on the Oxford mug. The deer of the Truro vase has many parallels on Apulian vases.[13] The tympana on the Truro and Oxford vases are very much like one another. On three of the four mugs the ground is indicated by a row of dots.[14]

The floral ornament of the Lampas painter is very characteristic.[15] It consists of a palmette flanked by a couple of tendrils on either side.[16] Between the tendrils a

[8] Blümel must have interpreted these lines as the top edges of shoes, since in his text on the Karlsruhe mug he writes: '. . . they all wear a radiate diadem, a band over the breast, and shoes'. This interpretation seems to me wrong: I do not know any representation of a Greek athlete wearing shoes.

[9] Notice that the hair of the first torch-racer, who is scarcely visible in our reproduction of the Karlsruhe vase, is tied up in a chignon.

[10] One would be tempted to identify the ornament on the lampadistae's heads with that worn by lampadistae on Attic vases (see the bell-krater London 98. 7–16. 6 by the Nikias painter, Schröder, *Sport*, pl. 51, 2; *A.R.V.* 847); but this would be wrong. Stephanai like those of our lampadistae are often worn by figures on Greek South Italian vases.

[11] It would be difficult to compare the features of their faces, but there is no doubt that their eyes were drawn by the same hand.

[12] Notice however that the folds of the chiton of the woman on the Oxford vase are indicated by straighter lines.

[13] For representations of deer on Apulian vases see among others London F277 (which I attribute to the Iliupersis painter), Copenhagen inv. Chr. VIII 316, *C.V.* VI, pl. 261 and pl. 262, 1, or Zurich, Archaeological Collection of the University, Overbeck, *Atlas*, pl. 13, 11 (for detail-photographs of this vase I am indebted to Dr. Christoph Clairmont).

[14] With the musical instrument in the field of the Truro mug, cf. that near the woman playing the trigonon on the obverse of Copenhagen inv. Chr. VIII 316, *C.V.* VI, pl. 261, 1c. Wegner (*Das Musikleben der Griechen*, p. 66) calls this instrument a xylophone.

[15] Of the floral ornament on the Karlsruhe mug only a very small part can be seen in our reproduction, sufficient however to assume that it should not be different from the others.

[16] The tendrils are shorter on the Reading and Karlsruhe vases, and the spiral-shaped tops of the outer ones

flower is painted in yellow at the top of a stem and buds are attached to the tendrils by similar stems.[17] Dots decorate the floral ornament and the rosettes. The use of miltos on top of the yellow colour is general on these vases.

A feature common to the Lampas painter's vases is that the underside of the foot is glazed, with the exception of one circular band (two on Oxford 1934.17) and the centre, which are reserved.

Now I come to two other pieces which, in shape and decoration, resemble the work of the Lampas painter. They are:

1. Mug (oinochoe shape VIII B). Oxford 438. Pl. VII, 3–4. Cat-like animal. In the field, plant and rosette. Height 128 mm.; diameter 110 mm.
2. Mug (oinochoe shape VIII B). Oxford 439. Pl. VI, 4. Cock. In the field, plant and rosette. Height 133 mm.; diameter 104 mm.

Their shapes are like those of the Karlsruhe and Reading vases, but the handle of Oxford 438 is not knotted. Instead of a laurel on the neck, there is an ivy-pattern with incised stems and painted leaves and berries. The figures, a cat-like animal on the one, a cock on the other, are entirely different from those on the vases attributed to the Lampas painter, but as subjects altogether original. The two mugs have in common a plant with three long leaves in the field. The rosette above the cock on Oxford 439 and those of the floral ornament on Oxford 438 are like the rosettes on the Lampas painter's vases; the rosette in front of the animal on Oxford 438 is slightly different. The floral ornament of these mugs is a variant of that on the vases in Karlsruhe and Reading: the palmette is flanked by two tendrils on either side, but the outer ones are here developed into elaborate systems of spirals and buds.

The stems of the buds are again yellow and covered with miltos. Miltos is also used to indicate the feathers of the cock on Oxford 439, but this is not very distinct in the reproduction.

The undersurfaces of the two mugs are glazed, with the exception of one circular band and the centre, which are reserved.

I find it difficult to date the work of the Lampas painter, but am inclined to ascribe it to the second half of the fourth century B.C.

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turn down and almost touch the wave-pattern below; they are set higher on the Truro and Oxford vases because the egg-pattern over the main scene does not extend to the surface above the floral ornament and behind the handle.

[17] Details on Apulian vases are often indicated in yellow or white colour. When yellow colour is used, it is, so far as I know, always applied on top of a layer of white colour.

ROMAN SITES ON THE TARHUNA PLATEAU OF TRIPOLITANIA

DURING the years 1895–6 the late H. Swainson Cowper visited the Tarhuna pleateau of Tripolitania and examined in considerable detail a large number of ancient sites. The results of this exploration, first published in the *Antiquary*, were later embodied in a monograph published in 1897.[1] Cowper was not the first European to visit the ancient monuments of the Tarhuna region: he had been preceded by Smyth (1817), Barth (1850), Von Bary (1875), and Rohlfs (1879).[2] His own work was more detailed, and geographically more concentrated, than that of his predecessors, and his publication, amply illustrated by photographs and drawings, remains to-day an indispensable companion for any investigator of ancient sites in the eastern Gebel.

Cowper's main thesis, which occupies a predominant place in his book, was that the trilithon-shaped 'senams' (arabic for 'idols') of the Tarhuna plateau were prehistoric monuments of a religious character. This conclusion was immediately challenged by Sir John Myres and the late Sir Arthur Evans, who demonstrated conclusively that these megalithic structures were in fact the frames of Roman olive-presses.[3] In consequence general interest in the Tarhuna plateau declined, and even the researches of De Mathuisieulx (1901–4), which resulted in the discovery of the important neo-Punic inscription of Ras el-Haddagia, failed to counterbalance the lost repute of the 'senams'.[4] On the eve of the Italian occupation Professors Salvatore Aurigemma and Francesco Beguinot carried out an archaeological mission in the Gebel and visited the Tarhuna; but it was not until 1940, when Professor Giacomo Caputo began the excavation of the great mausoleum of Gasr Doga, and of a church and fortified building lying to the east of Breviglieri village, that the archaeological interest of the zone once more attracted attention.[5]

Although increased knowledge of the Tarhuna plateau has deprived it of its prehistoric monuments, it still retains an archaeological importance as a zone of intensive Roman olive-cultivation, containing ancient monuments ranging in date from AD 15 to the end of the classical period. These monuments consist primarily of Roman–Libyan farmhouses with associated olive-presses and mausolea; but they also include pagan and Christian places of worship, and traces of a ceramic industry. Urban development, on a modest scale, is represented by the road-station at Medeina Doga, the largest site in the region.

When Cowper visited the Tarhuna plateau fifty years ago, the only tree in the

Note: references to *IRT* are to *The Inscriptions of Roman Tripolitania*, edited by J. M. Reynolds and J. B. Ward Perkins, for publication by the British School at Rome. Reference is by inscription-number.

[1] *The Antiquary*, February–March 1896; H. S. Cowper, *The Hill of the Graces*, London, 1897.

[2] W. H. Smyth, *The Mediterranean*, London, 1854, 486; H. Barth, *Travels and Discoveries in North and Central Africa*, London, 1857, I, 65–76; E. von Bary, *Zeitschrift für Ethnologie*, VIII (1876), 378–385; G. Rohlfs, *Kufra*, Leipzig, 1881, 104–7.

[3] *Proc. Soc. Antiq. Lon.* 2nd Ser. XVII (1897–9), 280–293. Cowper subsequently admitted, with very good grace, that his theories 'have proved to be radically wrong' (*Ibid.*, 297–300).

[4] *Nouvelles Archives des Missions Scientifiques*, X (1902), 269–272.

[5] A preliminary account of these excavations, by Professor Caputo, appears in *Bulletino del Museo dell'Impero Romano*, XIII (1942), 151–4.

whole zone was an ancient batum named 'el-Khadra', a landmark for many miles, the roots of which grow out of a small Roman mausoleum (pl. XI, 1).[6] Though surviving, and venerated by the Arabs as a *marabut*, this tree is to-day hardly noticeable among the extensive olive and almond plantations, and the high eucalyptus rows planted as windbreaks. The intensive agricultural development carried out in the Tarhuna area by Italian enterprise during the last twenty years has had, inevitably, an adverse effect on the condition of some of the ancient monuments. It has also resulted in the gradual abandonment of old Arab place-names and great difficulty was encountered in identifying the Ras el-Haddagia of the neo-Punic inscription (see p. 51 below). Fortunately Cowper's topographical descriptions are so exact that one can still identify on the ground most of the places to which he refers in his monograph.

Owing to his preoccupation with the supposedly religious character of the 'senams', Cowper said little about the Roman farm-houses to which these olive-presses belonged; and though his exploration gave an idea of the intensity of the Roman agricultural settlements, it did not provide much information as to their character and distribution. To-day, with the existence of good maps[7] we are in a better position to study these aspects; and at various times during the period 1946–9 the present writer was able to visit many of the Tarhuna sites, including some unknown to Cowper. The area selected for general study measures 26 × 21 kilometres (fig. 1) and includes the majority of the sites which Cowper visited. Excellent air photographs, taken by the R.A.F. for operational purposes in 1942, cover a strip of 20 × 5 km. in the heart of this area, and it is in this inner area that the writer's investigations have been mainly concentrated. It is not the intention of the present paper to correct or amplify the observations on the olive-presses already published by Cowper, but rather to concentrate on certain sites of special interest and importance, of which two—the sanctuary at Ras el-Haddagia, and the pottery-kiln at Ain Scersciara—were excavated by the writer in 1947. The mausoleum at Gasr Doga, and the church and fortified building near Breviglieri, both excavated by Professor Caputo, will be published elsewhere, and are therefore only referred to in the present article.

The writer is indebted to Professor Caputo for his advice and encouragement at all stages of the work, and for his hospitality at the Concessione Catarella on many occasions; to Professor Giorgio Levi Della Vida for his appendix (pp. 65–8) on the inscription of Ras el-Haddagia, incorporating the evidence of the additional fragments found in 1947; to Messrs M. H. Ballance and M. H. de Lisle for their help in the survey of Medeina Doga; to Sig. Santino Gaudino, an intelligent and capable foreman during the two small-scale excavations, and to Sigg. Carmelo Catanuso and F. de Liberali for drawings and photographs.

(1) *The geographical setting.* (Fig. 1).

The name Tarhuna belongs, in its wider sense, to a plateau some 40 km. in length from west to east, and some 20 km. from north to south. Its eastern and western limits

[6] Cowper (*op. cit.*, 256) incorrectly describes the stones around the roots of this tree as having been 'collected and placed there'. They are, in fact, *in situ*.

[7] Sheet 1475 (Tarhuna) of the series of 1/100,000 maps, surveyed by the Instituto Geografico Militare in 1933, covers the greater part of the plateau, and marks all the more important ancient sites. The original Italian edition of this map is much easier to read than the British war-time edition; but the latter has the advantage of a metrical grid (see Appendix IV).

are marked approximately by the wadis Gsèa and Wif (both outside the limits of the accompanying map). The northern limit is the edge of the steep escarpment which looks towards the Gefara; whilst the southern limit is not closely defined, the fertile soil of the Tarhuna gradually giving way to the rocky desert of the Orfella region. To-day the name Tarhuna is commonly applied to the modern village which has grown up around the wells of El-Ubberat, where the Turks constructed a fort and named it 'Gasr Tarhuna', after the region. Before the construction of this fort visiting Turkish

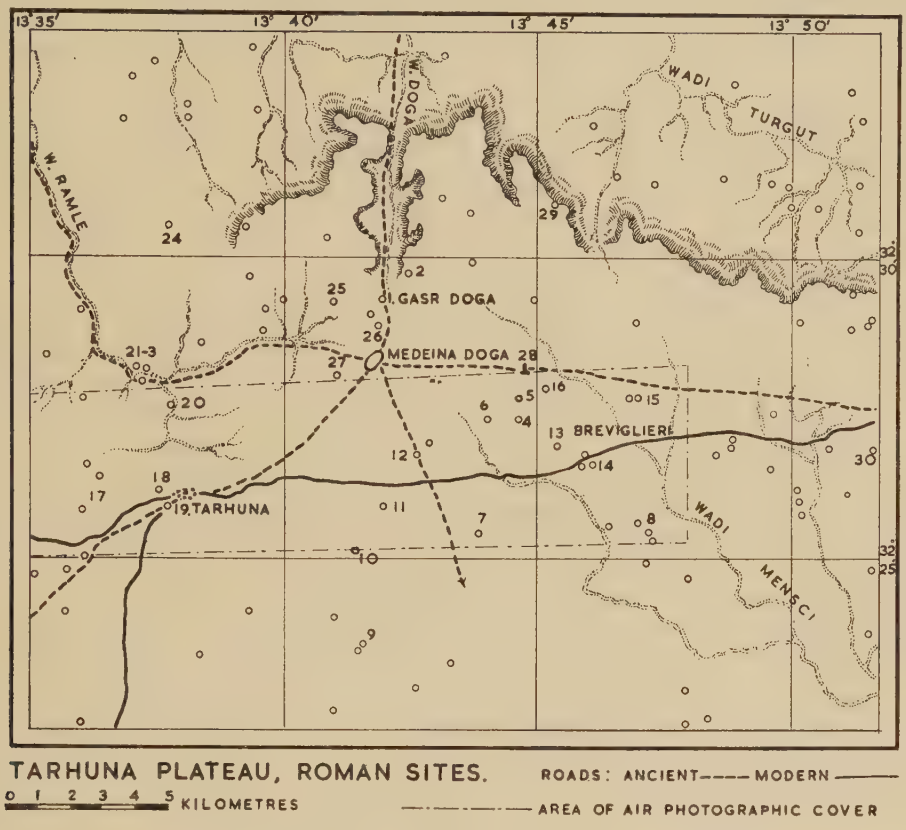

FIG. 1.

officials camped at Ain Scersciara. In Cowper's day there were no permanent dwellings anywhere on the plateau, the population living either in tents, or in underground houses, and moving seasonally to other areas.

The plateau averages 450 metres above sea-level, falling slightly from the Gebel escarpment (where some of the hill-tops exceeded 500 metres) in a south-easterly direction. It is a water-shed, the important wadis Ramle, Doga and Turgut running northwards towards the coast, and the upper tributaries of the Tareglat, of which the wadi Mensci is the most important, running south-eastwards. The Tareglat itself, bearing first eastward and then northward to meet the sea between Homs and Zliten,

is named Wadi Caam in its lowest sector and is clearly identifiable with the Κίνυψ (*Cinypus flumen*) of antiquity. It was because the *Cinypus* has its origins in the Tarhuna plateau that Cowper identified the latter as the 'Hill of the Graces' (λόφος ὁ χαρίτων) of Herodotus, described by that writer as 'thickly covered with trees, though all the rest of Libya is bare'. With the merits of this identification we are not, however, concerned here.[8]

Geologically, the plateau consists of limestone, of which bare outcrops appear on the hill-tops; but over the greater part of the area there exists a deep layer of fertile sandy soil. Beneath the upper limestone strata are to be found seams of good-quality clay, the outcrop of which at Ain Scersciara gave rise to the siting of a pottery industry there in Roman times.

Rainfall (normally 300 mm. per annum) is above the average for the rest of Tripolitania, excluding the fertile Menscia oasis of Tripoli, and important perennial springs exist at Ain Scersciara and Ain Doga.

(2) *Ancient communications.*

The plateau is traversed by a complex network of caravan tracks, many of which are now interrupted by the Italian agricultural settlements and replaced by hard roads. Most of these tracks radiate from El-Ubberat (Tarhuna village) and belong to the post-classical period; but there are faint traces of an earlier lay-out radiating from Medeina Doga, which was undoubtedly the nodal point of local communications during the Roman period. In all, five ancient tracks seem to have converged at Medeina Doga, of which two were marked out by Roman milestones, but none were apparently paved. Two, possibly three, represent routes recorded in the Roman itineraries. These five tracks are as follows:—

(*a*) The Eastern Gebel road, the earliest of which we have dating evidence, was laid out in AD 15–17 by L. Aelius Lamia, proconsul of Africa, and linked the Tarhuna zone with the port of Lepcis.[9] Although the earliest milestones found in the Tarhuna area are of the third century, there can be little reason to doubt that they follow the first-century line. At Mile XXX, in the Wadi el-Mé, Mr. David Oates has recently found two milestones (of Maximinus and Gordian III); two more (of Caracalla and an unidentified emperor) were found by Professor Caputo in 1940 *in situ* near the Zavia el-Medeni, and bear the mileage figure XXXVIIII.[10] The alignment of these two mile-stations points directly towards Medeina Doga, which by measurement, must have stood at the 42nd mile from Lepcis. The first-century terminal milestone, near the Arch of Septimius Severus at Lepcis, gives the length of the road as 44 miles, and its destination as *in mediterraneum*. Bearing in mind that the road was probably not marked out at every mile until the reign of Caracalla, the discrepancy of two miles is insignificant; and the fact that no precise destination is named on the

[8] Cowper, *op. cit.*, 122–130. Herodotus (IV, 175) describes the λόφος ὁ χαρίτων as being 200 stadia (35 km.) distant from the sea. The head of the Wadi Mensci, most distant tributary of the Wadi Caam, is actually 32 km. from the sea, as the crow flies, and twice that distance following the course of the Tareglat.

[9] For this road see Romanelli, *Epigraphica*, I (1939), 104–110, and Goodchild, *Roman Roads and Milestones in Tripolitania*, Tripoli, 1948, 11–13.

[10] Goodchild, *op. cit.*, 13 (nos. 12–13). The writer is indebted to Mr. Oates for information on the two newly discovered milestones.

Lepcis milestone probably indicates that Medeina Doga was not, in the reign of Tiberius, of sufficient importance to be specifically named.[11]

(*b*) Although the mileage figures preclude any possibility that Aelius Lamia's road continued further westward from Medeina Doga, that such a continuation was later established is shown by the Antonine Itinerary, and by recently-discovered milestones. The Itinerary [12] describes a road from *Turris Tamalleni* to *Lepcis* via the interior, and gives the following as the road-stations west of Lepcis: *Lepti Magna*—XL—*Mesphe*—XXX—*Thenadassa*. The identification of Medeina Doga as *Mesphe* (see below p. 49) seems certain, even though the mileage figure should be 42 rather than 40; and *Thenadassa* has recently been identified at Ain Wif, 30 Roman miles from Medeina Doga, where there are the remains of an important road-station with evidence of military occupation.[13] During 1950 the first Roman milestones came to light on the road from *Mesphe* to *Thenadassa*, at the 53rd and 57th miles from *Lepcis*. These columns, with inscriptions of Gordian III and Gallienus, show that the Roman road from Tarhuna to Ain Wif passed about 2 km. south of Tazzoli village centre, and did not follow the line of the modern motor track from Tazzoli to Ain Wif.

(*c*) Running due north from Medeina Doga a trackway of undoubted antiquity passes the mausoleum of Gasr Doga and the adjacent Roman cisterns, and continues along the bed of the Wadi Doga (the upper reach of the Wadi el-Msabha) to meet the Gefara plain at Sugh el-Giumaa. Thence it probably communicated with the Roman coast-road in the vicinity of Gasr Garabulli.[14]

(*d*) The direct route from *Mesphe* to *Oea* ran due west for five kilometres from Medeina Doga to Ain Scersciara, and then followed the bed of the Wadi Ramle to the Gefara, which it crossed in a direct line to Mellaha in the Tripoli oasis. This track became the 'Trigh Tarhuna', constantly used before the construction of the modern road from Tarhuna to Tripoli via Castel Benito. This may well be the inland route from *Lepcis* to *Oea* shown in the Peutinger Map, where the road-stations and distances are given as follows: *Lepti Magna*—XXV—*Subututtu*—XV—*Cercar*—XX—*Flacci Taberna*—XVI—*Oea*. This hypothesis would involve placing *Cercar* either at, or near, Medeina Doga; and it may be questioned whether that site would have had two alternative ancient names. On the other hand, the simpler hypothesis that the inland route marked on the Peutinger Map ran parallel, and close, to the coast road involves even greater topographical difficulties.[15]

(*e*) Finally, there are faint traces, visible on air-photographs,[16] of a trackway running southwards from Medeina Doga, passing the mausoleum of El-Khadra, and then apparently continuing towards the Orfella region. Although the exact route and

[11] An alternative explanation might be that the original *caput viae* was at Ain Scersciara rather than Medeina Doga, in which case the distance of 44 miles would be correct.

[12] *Itineraria Romana*, I (ed. Cuntz), 10–11.

[13] For Ain Wif, see *JRS* XXXIX (1949), 84–8. The writer is indebted to Prof. Caputo for information of the new milestone discoveries in the Tazzoli area.

[14] The inscription (Appendix III, no. 5) seen by Cowper 200 yards north of Gasr Doga might have been part of a milestone on this route, but the existing record is insufficient to establish the character of the inscription. So, too, the Caracallan milestone (*IRT* 928) from near Gasr Garabulli could possibly belong to a road leading from the coast to Medeina Doga.

[15] Romanelli (*Epigraphica*, I (1939), 107) adopts the latter interpretation, but it is difficult to see what purpose would have been served by such a route, as there were few centres of importance in the Gefara.

[16] It should be noted that the road from Lepcis to Medeina Doga does not show up at all on the air photos of the Tarhuna plateau, even though its course is known from the milestones. In cultivated terrain those unpaved routes that fell out of use soon after the Roman period were rapidly obliterated by wind-blown sand or by cultivation.

destination of this trackway have still to be determined, it would be reasonable to suppose that Medeina Doga was, during the later Roman period, at least, linked by a recognised route with the intensively occupied wadis of the Orfella.

Thus Medeina Doga was an important meeting-point of tracks used in the Roman period, and the area selected for study may be considered as having been exposed, throughout the classical period, to cultural and political influences penetrating both southwards from the coast, and northwards from the Sahara. It is hardly surprising, therefore, that the epigraphy [17] of the region records Libyan, Punic and Roman names, and that a few luxury villas with mosaic floors stood in a zone where the more common type of Romanised habitation was the austere fortified farmhouse. Moreover, the fact that the road from Lepcis through Medeina Doga to Ain Wif is described in the Antonine Itinerary as *iter quod limitem Tripolitanum ducit* reminds us that military influence must have been strong, even in this area of intensive agricultural development.

(3) *Medeina Doga.* (Fig. 2).

The Roman road-station at the head of the Wadi Doga, the meeting point of the five trackways listed above, is the most extensive ancient site in the area selected for study: it is also, after Ghirza, the largest site so far encountered in the interior of Tripolitania, and the one most closely approximating to a small town. It lies inconspicuously among the recent olive plantations of the Concessione S.A.F.I.L., in a natural bowl, a fact which distinguishes it from the majority of the ancient sites of the Tarhuna, and may explain why its ruins have attracted so little attention. Captain (later Rear-Admiral) W. H. Smyth seems to have been the first to record the antiquities of this site, but he exaggerated its extent, probably through including some of the adjacent but isolated ruins. Rohlfs, visiting the site in 1879, wrote 'Südöstlich von diesem Grabdenkmal (Gasr Doga) welches einer genauern Untersuchung würdig ist, liegt etwa 2 km entfernt das grossartige, wahrscheinlich ebenfalls aus der Römerzeit herstammende Ruinenfeld einer ganzen Stadt', and added that the Arabs found coins and 'intagli' in the ruins. Cowper seems to have visited the site but says little about it; and, although an Italian official at Tarhuna interested himself in the necropolis, there seems to be no further published reference to Medeina Doga, which is not even marked as an ancient site on the 1/100,000 map.[18]

The site (fig. 2) is to-day covered by a geometrical 'grid' of olive-trees laid out in straight lines at intervals of 20 metres, but the mass of masonry and rubble has hindered the growth of many of the young trees. Industrious farm-workers have collected into cairns the smaller stones lying on the surface, but large numbers of squared orthostats and occasional columns protrude from the low mounds which mark the area; and from these and the scatter of stones, tiles and pottery, the approximate limits of the ancient settlement can be determined.

A caravan track enters the site from the east, passing the base of a small mausoleum (A), and continues over the highest mound (B), which probably covers a building of

[17] For the epigraphy of the area see Appendix III, and the relevant sections of *IRT*.

[18] Smyth, *The Mediterranean*, 486; Rohlfs, *Kufra*, 106. Cowper (*Hill of the Graces*, 240 (Site 12), and 241, note 1) refers to 'a large mass of ruins, consisting chiefly of Roman work, such as fragments of columns, wells, baths or cisterns' which lay a half-hour south-east of Gasr Doga, and is probably to be identified with Medeina Doga; but he saw no recognisable city, and for that reason thought he had missed Smyth's 'Medina Dugha'.

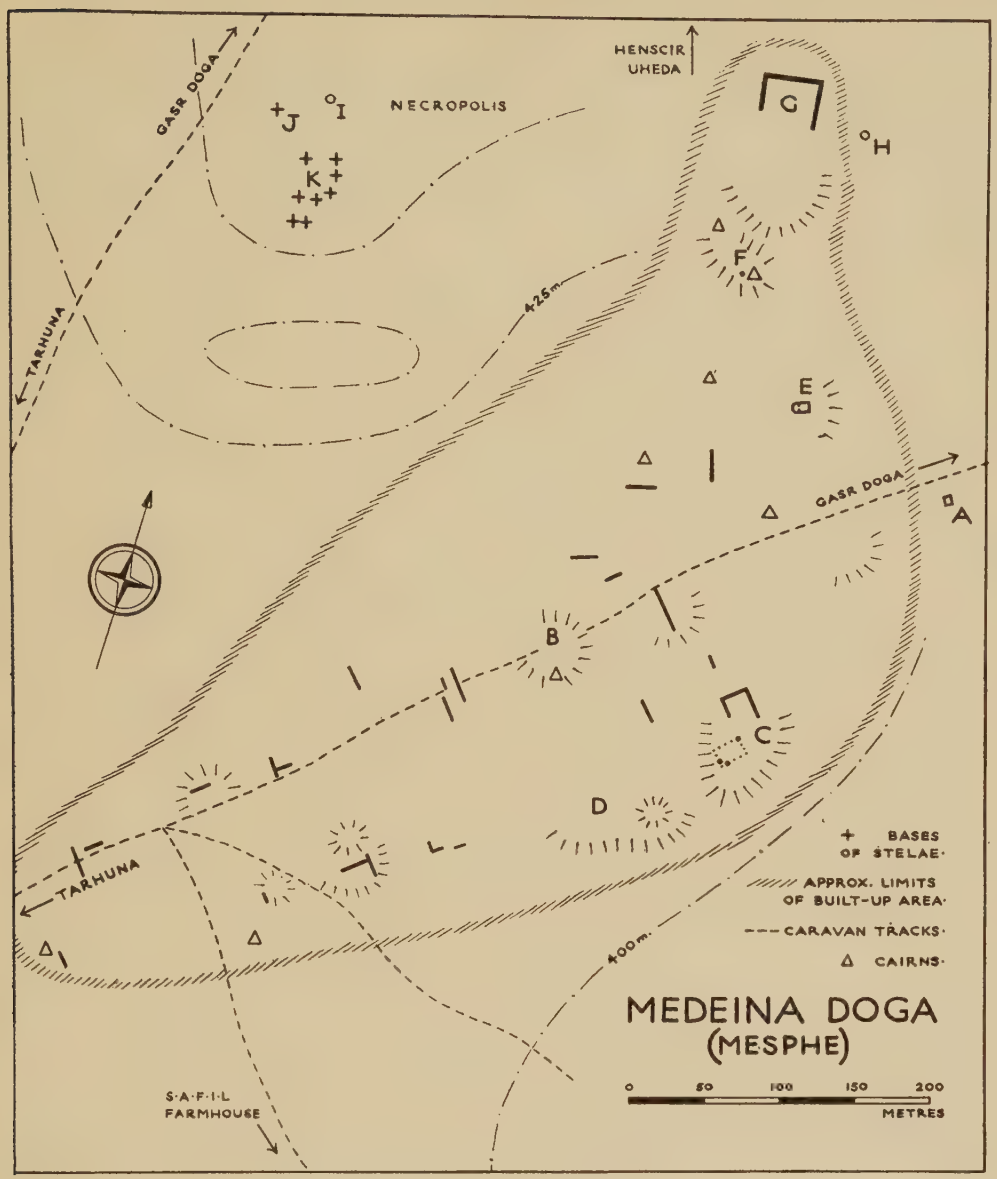

FIG. 2.

some importance. The most substantial visible remains lie south of this track and include a colonnaded building (C) with limestone columns of 60 cm. diameter, and the probable site of a bath-building (D), marked by flue-tiles on the surface. Another bath-building—perhaps the main one—lay north of the track (E), and its apsed frigidarium was partly uncovered in 1949. On the north-east side of the site the area of ruins runs up the gentle slope of the hill, includes another colonnaded building (F)

and terminates in a large enclosure (G) with walls of large ashlar blocks, in contrast to the orthostat-and-rubble masonry used elsewhere on the site. Some 300 metres further north, an isolated ruin, called Henscir Uhéda and surrounded by a ditch, crowns the hilltop. Fragments of a marble statue were found here on the surface in 1949, and a limestone panel with the Constantinian monogram, now in Tripoli Museum, was brought from this ruin in 1914.[19] On the western side of the built-up area, the ruins continue as a thin strip along the caravan track for a little distance towards Tarhuna, and extend almost to the site of another ditched building.

It is evident that Medeina Doga had no perimetral defences, in which respect (as in many others) it resembles the road-station at Ain Wif. Its general lay-out suggests the gradual development of a settlement beside an ancient road that ran more or less on the line of the trackway which now crosses the site. The wall-alignments are consistently parallel or at right-angles to this track, except in the north-eastern sector, where there seems to have been a northward extension on a different alignment.

The main necropolis of this roadside community lay on the north side of the residential area. Close to the large enclosure (G) a hole in the ground (H) leads to a series of underground chambers, which were inspected in 1949, but not surveyed. They appear to run for some distance westward under building G, from which a vertical shaft, now blocked, apparently gave access to them. These tomb-chambers have been previously entered, and without removal of the deep deposit of soil which has washed into them, it is difficult to judge their date and character. Further to the west a recent subsidence in the ground (I) marks another group of underground tomb-chambers. Nearby (K) are scattered on the surface numerous bases of Libyan funerary monuments.[20] One complete stele (J) with pointed top, bears a Latino-libyan funerary inscription.[21]

Trial pits dug in 1949 revealed that the ruins of Medeina Doga are well preserved beneath the surface, but at a depth which would necessitate fairly extensive excavations to obtain useful results. The moulded base of a column of building C was found to rest on a pavement of stone flags 1·50 m. below the surface. In the case of the northern bath-building (E), the *opus signinum* floor of the apsed frigidarium was found at 1·30 m. below the surface. A bench ran around the curve of the apse, and was interrupted by a cement lavabo, which was originally fed from an external cistern and had an outlet pipe, cased in cement, running across the floor of the room (pl. IX, 1).

Our general picture of Medeina Doga is that of a *vicus*, which developed gradually at the intersection of several important trackways and eventually became a fully romanised centre of some importance. Whether a small community already existed on the spot in AD 15–17, when Aelius Lamia's road was cut, remains to be determined; but the fact that the road (at least, as marked by later milestones) headed straight for this site in the last 12 miles of its course may not be without significance. It is equally uncertain what part this site played in the organisation of the *limes*: the irregular lay-out argues against a distinctively military origin; but the case of Ain Wif shows that the lack

[19] G. Nave, 'Frammenti indigeni d'arte cristiana a Tarhuna ed Henscir Uheda, Tripolitania', *Bollettino d'Arte*, VIII (1914), 96–104.

[20] These bases include stones with rectangular hollows cut in their upper surfaces, and presumably intended to receive funerary offerings. Professor Caputo, who has found similar stones in the Fezzan, is studying these objects.

[21] Appendix III, no. 6. Since removed, together with some of the bases, to Lepcis Museum.

of defences cannot be held to disprove the possibility of its having, at some period, contained a small garrison. The large enclosure (G) may be military in character, and a mausoleum which lay further to the north and is now demolished, contained an inscription recording a *veteranus*.[22] It can hardly be doubted, at least, that Medeina Doga, the *Mesphe* of the Antonine Itinerary, remained the local administrative centre of the Tarhuna plateau throughout the Roman period; but the elucidation of its detailed history must await excavation.

(4) *The Sanctuary of Ammon at Ras el-Haddagia.* (Pls. VIII, IX; figs. 3, 4).

The earliest dated building on the plateau is the Ammonium of Ras el-Haddagia. Cowper visited this site (his no. 31, which he calls 'Kom el-Khadajieh') in 1895, but observed on the surface nothing of apparent significance. De Mathuisieulx, in 1901, was more fortunate, for in the intervening years Arabs had unearthed a large block, in two pieces, on which was inscribed a long neo-Punic text. A squeeze was sent to Clermont-Ganneau, who was able to determine that the inscription referred to the construction of a sanctuary of Ammon, built during the proconsulship of L. Aelius Lamia (AD 15–17). The inscription, rediscovered by Aurigemma and Beguinot in 1911, was transported to Tripoli Museum three years later,[23] and the site of the discovery was soon forgotten, so much so that in 1935 the contractors who built Breviglieri village-centre quarried much of their stone from the ancient walls.

The name Ras el-Haddagia, recorded by Aurigemma as the site of De Mathuisieulx's discovery, appears on no modern map, and considerable difficulty was experienced in 1947, when the writer, in collaboration with Prof. Caputo, sought to identify it. Cowper's topographical indications gave a clue, and eventually an elderly Arab was found who remembered the place-name and ascribed it to a hill 2 km. south of Zavia el-Medeni, and 1 km. west-north-west of Breviglieri village-centre (fig. 3). Examination of the air photographs covering this region revealed some dim outlines of what appeared to be walls on this hill-top (ht. 432 metres); and a visit to the site established that these 'walls' were in fact robber-trenches, still open, from which the stones of ancient walls had been extracted within the memory of local Italian peasants. Excavation was decided upon in order to obtain such information as had survived the stone-robbing; and in the course of this excavation, the lowest courses of the Ammonium were found almost intact, together with further fragments of the neo-Punic dedicatory inscription, thus confirming the identification of the site beyond any discussion.

The surviving remains of the Ammonium consist of three features: (*a*) the Shrine; (*b*) the Portico; and (*c*) late walls, representing a farmhouse of the Christian period or later, which had occupied the whole site after its desecration and destruction. Associated objects were few. Two small fragments of white marble, one representing a palm trunk, were all that had survived of the cult-statues. The angle of a Corinthian pilaster-capital in grey limestone was the only relic of the original architectural ornamentation. The only two coins found were both illegible; whilst the relatively abundant coarse

[22] Appendix III, no. 1.

[23] Cowper, *op. cit.*, 256; De Mathuisieulx, *Nouv. Archives des Miss. Scientif.*, X (1902), 272 and XIII (1906), 93 (where the site of the discovery is called 'Er-Sailat', a name not recorded elsewhere); Aurigemma, *Notiziario Archeologico*, I (1915), 39, gives the correct name, Ras el-Haddagia.

pottery was found, unstratified, in soil disturbed by the stone-robbing. In one or two areas, where pre-Sanctuary humus layers were found undisturbed, they contained no occupation material of any kind. A single post-hole, found just outside the south-west

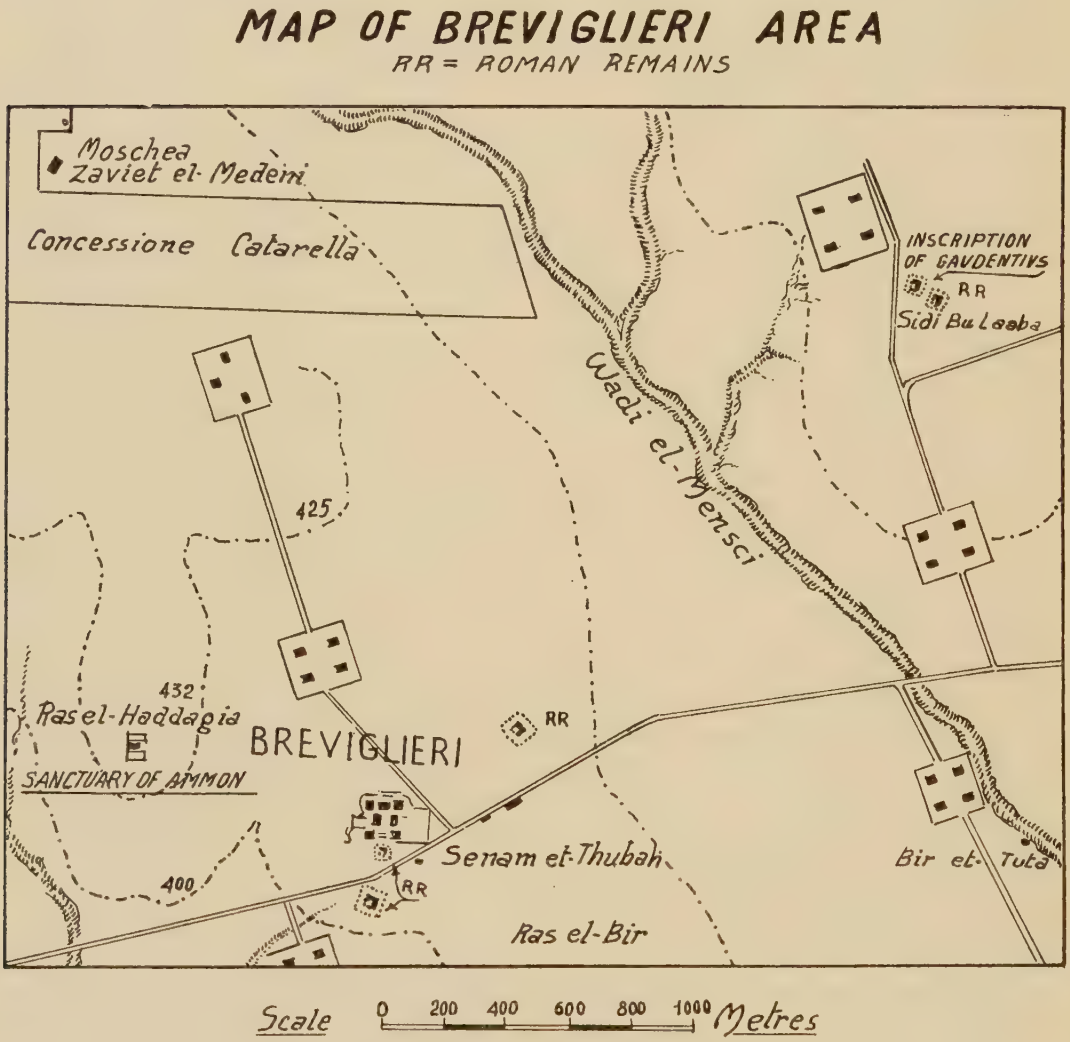

FIG. 3.

corner of the shrine, was probably cut to receive a scaffold-pole or a fence-stake associated with the stone building, and cannot be considered to prove the existence of a timber predecessor. In these circumstances, the dated dedicatory inscription may be held to indicate the beginning of occupation on the site; whilst a lamp of late form, found in the ruins of the rough walls of the later farmstead, represents the latest period.

(a) *The Shrine* (pls. VIII, 2; IX, 3) is represented by the lowest course of finely-cut and tooled limestone blocks, forming a rectangle of 7·05 × 2·95 metres, with a partition wall towards the west end of the rectangle. To ensure stable foundations, the natural rock, which rises to within 40 cm. of the present surface outside the area of the shrine, had been levelled off at a depth of 80 cm. over the whole area of the structure. On this solid and level bed of rock was laid the foundation course of blocks 44 cm. high and normally 51 cm. in width. Some of the blocks, however, were trimmed only on their outer face, which indicates that the structure was of podium type, its original floor-level being close to, if not above, present ground level. The earth filling of the podium was entirely disturbed, a large pit (fig. 4; Pit 1) having been dug in the eastern half of the building; it contained mixed soil, potsherds and damaged limestone blocks. Another pit (fig. 4; Pit 2) was found outside the north wall of the podium, and ran obliquely under the wall foundations: it was 2·20 metres deep and contained much mortar, wall-plaster, and a fragment of the neo-Punic dedicatory inscription. Both these pits evidently post-date the abandonment of the sanctuary. The only other feature of note relating to the Shrine was a rectangular cutting recessed into the rock outside the east face of the podium. This can hardly be other than the site of an altar that was completely dismantled when the sanctuary was desecrated. It should also be remarked that the wide foundation-bedding cut for the east podium wall probably marks the site of a flight of steps.

(b) *The Portico* is the most damaged part of the whole site, the stone-robbers of 1935 having removed all but four blocks. Its walls were, however, marked either by the bedding-level cut in the rock (fig. 4: 'imprint'), or by robber-trenches in the upper strata. Thus the complete plan of the structure could be ascertained. The greater width (0·90 m.) of the inner wall, in contrast to that of the outer walls (0·60 cm.), suggests that it served as a stylobate for a colonnade open towards the shrine. If this hypothesis is correct—and it would seem to be supported by the fact that the neo-Punic inscription mentions 'porticoes'—we must interpret this part of the building as a covered shelter for visitors awaiting their turn to pay their vows at the shrine.

The portico was structurally secondary to the shrine, the foundation trench on its west wall being 13 cm. higher than that of the podium, and its outer wall inset by 12 cm., but it need not necessarily be inferred that it was later in date: its few surviving blocks, though less neatly trimmed, were of the same character as those of the podium. It may be stated categorically that no corresponding portico existed on the south side of the shrine. The rock and topsoil south of the south-west angle of the podium were undisturbed, and neither foundations of the pagan period nor robber-trenches marking their site were encountered anywhere south of the shrine.

(c) *The late farm-house*. The walls of this building consisted of small chips of blocks and columns, with occasional large blocks to give strength to angles and wall-junctions. Later disturbance had been extensive throughout its area, and the plan as recovered by the excavation is incomplete. In one place a rough concrete floor was found; but towards the south, where the natural rock approaches the surface, the rock itself, pitted and uneven, served as a floor. It may be assumed that, in its original state, this late farmhouse extended northwards across the ruins of the shrine and portico, the pits under the podium probably being associated with it. The general impression

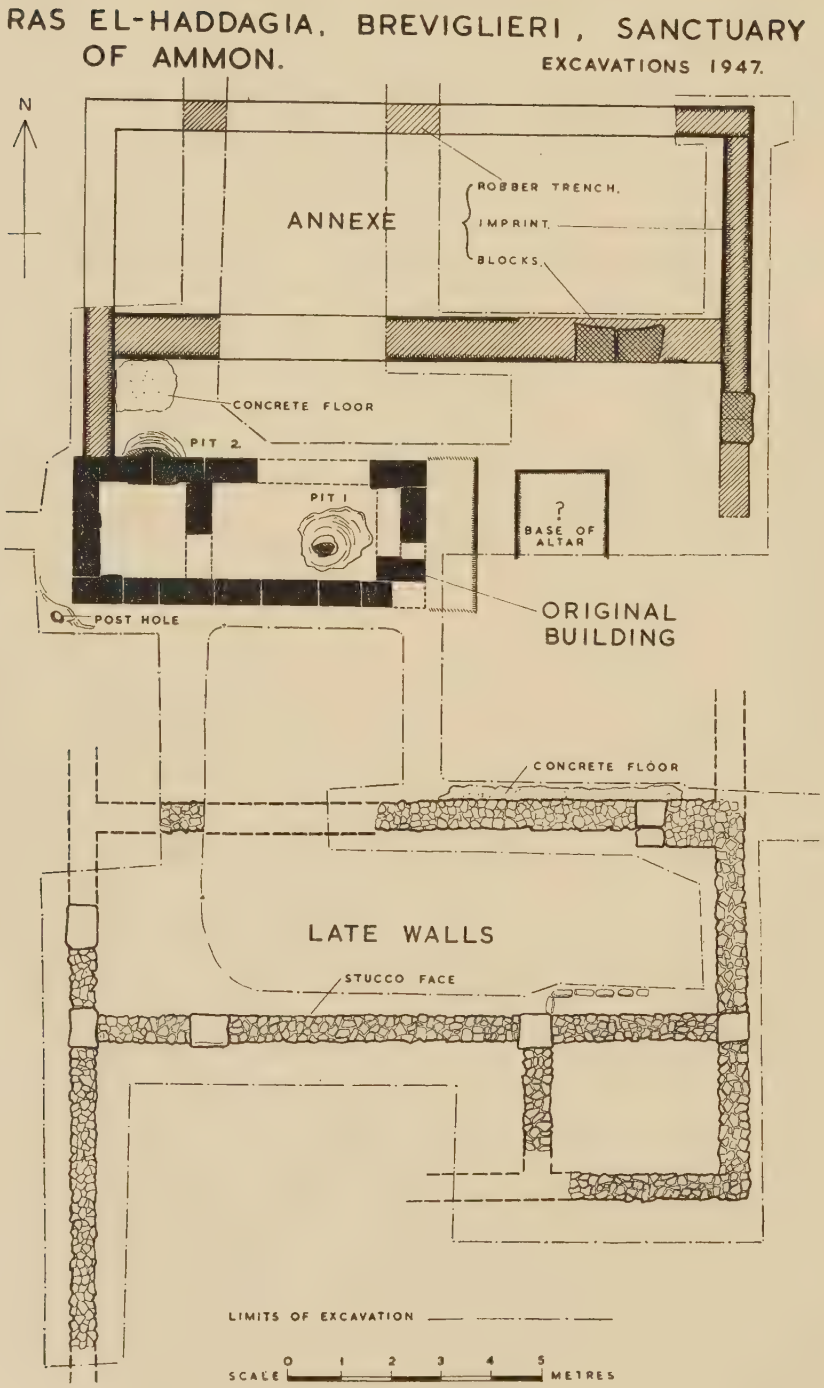
RAS EL-HADDAGIA. BREVIGLIERI, SANCTUARY OF AMMON.
EXCAVATIONS 1947.
N
ANNEXE
ROBBER TRENCH.
IMPRINT.
BLOCKS.
CONCRETE FLOOR
PIT 2.
PIT 1
?
BASE OF ALTAR
POST HOLE
ORIGINAL BUILDING
CONCRETE FLOOR
LATE WALLS
STUCCO FACE
LIMITS OF EXCAVATION
SCALE 0 1 2 3 4 5 METRES

FIG. 4.

conveyed by these sorry remains is one of abject poverty, and although classed here as a farmhouse, this ramshackle structure must be sharply distinguished from the well-built, if austere, fortified farms of the Tarhuna plateau. Chronologically, the building must belong to the final phase of settled occupation on the plateau, and it was perhaps the home of a simple herdsman and his family.

The general character of the Sanctuary of Ammon, before its demolition in the Christian period, is not entirely clear from the few surviving remains. It seems to have been a small countryside shrine, of podium type, with steps and altar on the east; and with a small square chamber at the west end of the podium. It was in this chamber that we may assume that the cult-statue, referred to in the dedicatory inscription, stood. The exact position occupied by the inscribed lintel is uncertain; but since its length (2·19 metres) is slightly less than the width of the podium, we may imagine that it stood above the entrance to the cult-chamber. Close parallels for this small countryside sanctuary are difficult to find, if only because our knowledge of temple architecture in Tripolitania is largely confined to the coastal cities. The little temple at Sghedeida, on the outskirts of the Tripoli oasis, excavated by Professor Renato Bartoccini in 1921,[24] has certain affinities, including a floor-level raised 0·50 metres above the ancient ground-level and an altar in front of the building. It is interesting to note that the cult-chamber at Sghedeida could only be entered 'per mezzo di un'apertura rialzata dal suolo, simile ad una finestra, attraverso la quale il devoto poteva anche passare la propria offerta'. It is very probable that at Ras el-Haddagia, as at Sghedeida, the cult-statue was intended to be seen but not closely approached. The architectural form of the shrine is, however, more closely paralleled by Senam Tininai, between Mizda and Beni Ulid, a structure sometimes incorrectly described as a mausoleum, but certainly—as both its architecture and inscription confirm—a small temple.[25] Here, as at Ras el-Haddagia, the cult-chamber was fronted by a pronaos, a feature absent at Sghedeida. The measurements of these three shrines, the only rural examples at present known in Tripolitania, may be tabulated as follows:—

	Internal dimensions of cult-chamber, m.	Overall external dimensions, m.
Ras el-Haddagia	1·85 × 1·7	7·05 × 2·95
Sghedeida	1·20 × 1·00	2·25 × 2·05 *
Senam Tininai	2·45 × 2·20	6·80 × 3·40

(* Excluding precinct wall).

If we compare the plans of these Tripolitanian shrines with the two best-known Romano-Punic rural sanctuaries in Tunisia—the Sanctuary of Baal and Tanit near Siagu, and the Sanctuary of Tanit at El-Kenissia, near Sousse [26]—we cannot fail to be struck by the simplicity of the Tripolitanian shrines and the complexity of the Tunisian. The only point of similarity would seem to lie in the use of extremely small chambers

[24] *Africa Italiana*, I (1927), 213–4.

[25] De Mathuisieulx (*Nouvelles Archives*, XII (1904), 21) and Gentilucci (*Africa Italiana*, V (1933), 187, and fig. 20–21) both describe the Senam Tininai structure as a mausoleum; but its remains, surveyed by the writer in 1949, and an inscription found on the site (*IRT* 888) indicate that it was a small temple.

[26] *Siagu*: A. Merlin, 'Le Sanctuaire de Baal et de Tanit près de Siagu', *Notes et Documents de la Direction des Antiquités et Arts* (Tunis), IV (1910), pl. I. *El-Kenissia*: Carton, 'Le Sanctuaire de Tanit à el-Kenissia', *Mém. Acad. Inscriptions*, XII, i (1906), pl. I.

to house the cult-statues. It is hardly possible, however, in the present state of knowledge, to recognise in the surviving ruins of the Ras el-Haddagia Ammonium any features that can be said to reflect the nature of the cult.

It is safe, perhaps, to say that in outward character the building is essentially Roman; and Levi Della Vida has already pointed out that the excellent palaeography and the separation of individual words prove the dedicatory inscription of the Ammonium to have been cut under Roman influence.[27] That the architect and the builders of the Ammonium were skilled craftsmen from the coast seems indisputable; and it may be doubted whether they would have been influenced in their choice of design by any native Libyan tradition.

The most pertinent question which may be asked is whether the divinity described as 'the Lord Ammon' in the dedicatory inscription is to be identified with the Libyan Jupiter Ammon, whose cult spread westwards from the oasis of Siwa, or with the Punic Baal-Hammon, identified with Saturn in the Roman pantheon. Clermont-Ganneau suggested the former interpretation; whilst Lidzbarski, on purely linguistic grounds, preferred the second.[28] In considering this problem it must be borne in mind that the dedicator, at Ras el-Haddagia, bears a Libyan and not a Punic name (see Appendix I); and that whereas the cult of Saturn is not attested in any literary or epigraphic documents relating to the area of modern Tripolitania, that of Jupiter Ammon is. A road station *ad Ammonem* stood 16 Roman miles west of Sabratha (Peutinger Map); an Ἄμμωνος (πόλις) is recorded by Ptolemy (IV, 3, 42) somewhere in the interior of Tripolitania; an inscription to *Jupiter Hammon* (*IRT* 920) has been found at Bu-Ngem; whilst traces of the cult are no less frequent in Cyrenaica.[29] Finally, it is not perhaps without significance that a fragment of wall-plaster found in Pit 2 at Ras el-Haddagia bears the painted letters . . . AMM . . ., which would suggest that the divinity of this sanctuary bore the name Hammon, and not Saturn, under the *interpretatio romana*.

(5) *The villa and pottery-works at Ain Scersciara.*

It would be expected that at Scersciara, as at Gasr Doga and Ain Wif, there should be traces of Roman settlement in the vicinity of the perennial springs; and Barth, who camped on this pleasant site in February 1850, noted the ruins of a massive building of large stones on the hillside some 200 m. north of the waterfall.[30] This building, reconstructed as a fort during the Turkish period, and consequently much mutilated, has traces of a surrounding ditch, and was in origin probably a Roman fortified farm of the usual type: it does not appear to be of exceptional interest. More unusual, for the region in which they occur, are the remains of a mosaic floor exposed in a road-cutting made shortly before the war, on the west side of the cascade, and some 50 metres from it.

(a) *The portico and mosaics.* (Pl. XI, 2; fig. 5).

During 1947 this mosaic was examined, to discover the character of the structure to which it belonged, and to decide on the best measures of protection. Owing to the

[27] G. Levi Della Vida, *Libya* (*già Rivista della Tripolitania*), III, 96.

[28] See Levi Della Vida's remarks in Appendix I (below, p. 67).

[29] L. Vitali, *Fonti per la storia della religione Cyrenaica*, Padua, 1932, 4–10.

[30] H. Barth, *Travels and Discoveries*, I, 66.

presence of a plantation of young eucalyptus trees, the exploratory trenches were of necessity irregular and intermittent (fig. 5). They revealed that the exposed section of mosaic belonged to a series of rectangular panels, separated by guilloche borders; these panels formed the floor of a narrow portico closed by a continuous wall on one side, with a colonnade opening northwards towards the hollow of a small tributary wadi. The borders of the individual panels conform to the intercolumniation of the colonnade, the bases of which were 2·60 metres apart, centre to centre. The columns were of strongly cemented rubble, with a stucco surface, an unusual method of construction in this Gebel area, where good quality limestone is abundant: they rested on a continuous stylobate of limestone blocks. The variety of the geometrical designs in the various panels (in red, white and blue tesserae), their competent execution, and the material used in the columns and back wall of the portico all testify to construction by artisans familiar with the constructional features of coastal villas, and perhaps less skilled in handling heavy materials.

It is clear that the portico was not an organic part of a villa lay-out. There are no traces of rooms opening off it, and its line, following the edge of a natural hollow, diverges from the straight. The portico was traced for some 25 metres southwards from the first surviving mosaic panel, and for some 12 metres northwards towards the waterfall, to which it seems to have descended by a series of terraces; but in this latter area the mosaic floor had completely disappeared, the stylobate alone surviving. In the southern part of the excavated area, where the portico was covered by a metre of wind-blown sand, and had not suffered interference, the mosaic was found covered by a thick layer of white mortar representing the collapsed terrazzo-roof of the portico. This interpretation was confirmed by the absence of roof-tiles. Between the layer and the mosaic itself there was no occupation material, a fact which indicates that the portico was not lived in.

The purpose of the portico seems to have been to provide covered communication between an as yet unlocated villa and the waterfall. Possibly this villa lies beneath a conspicuous mound some 50 metres beyond the southernmost trench dug in 1947; but time and funds did not permit its investigation. To judge from the quality of the mosaics in the portico, it would seem that this supposed villa must have been a rich one, and it would not be surprising if its owners had felt the need to connect it, by a covered portico, with the waterfall itself where there may have been a shrine or a nymphaeum. The mosaics themselves are of a type one would tentatively date to the second century AD.

(b) *The potters' works.* (Pl. X; figs. 6, 9).

Only 100 metres north of the waterfall, and close to the steep cliff of the main wadi bed, quantities of potsherds and blocks of baked clay were noticed on the surface during the investigations of 1947. A trial excavation brought to light a small circular pottery kiln, in poor state of preservation, of a type known in other sites in Tripolitania (see Appendix II). A short distance from this first kiln, an isolated mound attracted attention for the remains of a clay-built structure which protruded from it. When completely cleared of superficial sand, this mound proved to contain two large circular kilns, one almost completely destroyed, the other in a remarkable state of

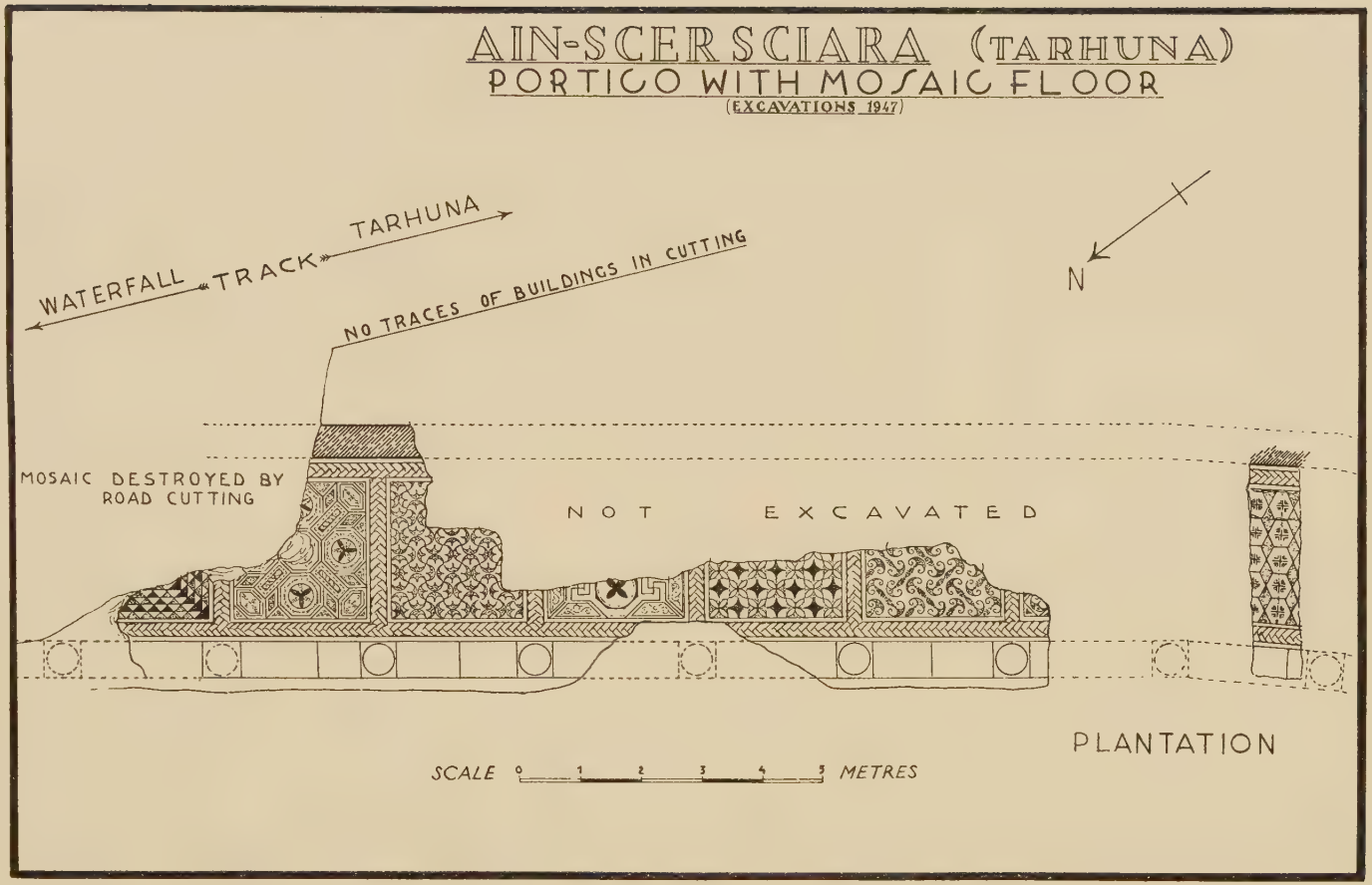

FIG. 5. *(drawn by C. Catanuso)*

preservation. Measuring over 6·00 m. in diameter, it must rank as one of the largest Roman circular kilns yet brought to light.

The kiln (pl. X; fig. 6) was of up-draught type, its perforated oven floor being supported on a central pillar. The identification of the stoke-hole arch proved the depth of the combustion chamber to be $4\frac{1}{2}$ m. but it was not possible to remove all the soil from this chamber without risking the collapse of the whole structure. The outer walls of the kiln were of clay blocks which, not being completely fired, were friable; the inner structure, lined with clay daub, had been fused by the heat to the solidity of cement. The vent-holes, arranged in six concentric circles, were cut in the oven floor in the spaces between the 32 ribs that, springing from the central column, supported that floor. Of the walls of the oven proper only a small segment remained intact, and there is no evidence of how the oven was covered during firing. This type of kiln, in which the perforated oven floor is supported by a central pillar, rather than by transverse walls or a longitudinal rib, seems to have been rare in the European provinces of the Roman empire, and the closest parallel known to the writer is presented by two kilns found in the Byzantine potteries of Corinth in 1936–7.[31] The smaller and better preserved of these two kilns presents a profile remarkably similar to that of Ain Scersciara. The Corinth kilns, although of the eleventh century AD, probably represent a survival of a type which was widely diffused in the Mediterranean during the later Roman period. Yet we know so little about the character of Roman kilns in the Mediterranean area that it would be rash to generalise. (See Appendix II). No remains of the kiln's last load were found in the oven, and the industry can only be dated from the indirect evidence of the pottery sherds and wasters, all of coarse ware, found throughout the site. These suggest, though they can hardly be said to prove, a late date —perhaps in the fourth century[32]: it may well be that by this period the villa and portico on the other side of the waterfall had already fallen out of use, for the smoke and activity of the industrial site must have reduced the residential charms of Ain Scersciara. The siting of the ceramic industry at this place is easily explained. Water and good-quality clay were both available in abundance, and wood for fuel was probably easily obtained locally. The road-system already described, of which one branch passes the Scersciara site, enabled the products of the kilns to be exported easily both to the coast and to the interior.

(6) *The fortified farms of the Tarhuna plateau.* (Pl. XII).

The sites at Medeina Doga, Ras el-Haddagia and Ain Scersciara represent special aspects of the romanisation of the Tarhuna plateau. More characteristic of its archaeology are the olive-presses, which Cowper has described in some detail, and the farmhouses with which these presses were associated. Rarely, if ever, do the 'senams' of Tarhuna stand isolated from the dwellings of those who used them. Sometimes they are found built into the interior walls of a farmhouse, itself surrounded by a ditch; more often, in the area under review, the olive-presses are found on the outer edge of the ditch, or a little distance beyond it.

On the Tarhuna plateau the great majority of the ancient farm sites are surrounded

[31] *Corinth*, XI (C. H. Morgan, *The Byzantine Pottery*), Harvard, 1942, 15–17, and fig. 9.

[32] See Appendix II. These surface finds have been deposited in Tripoli Museum.

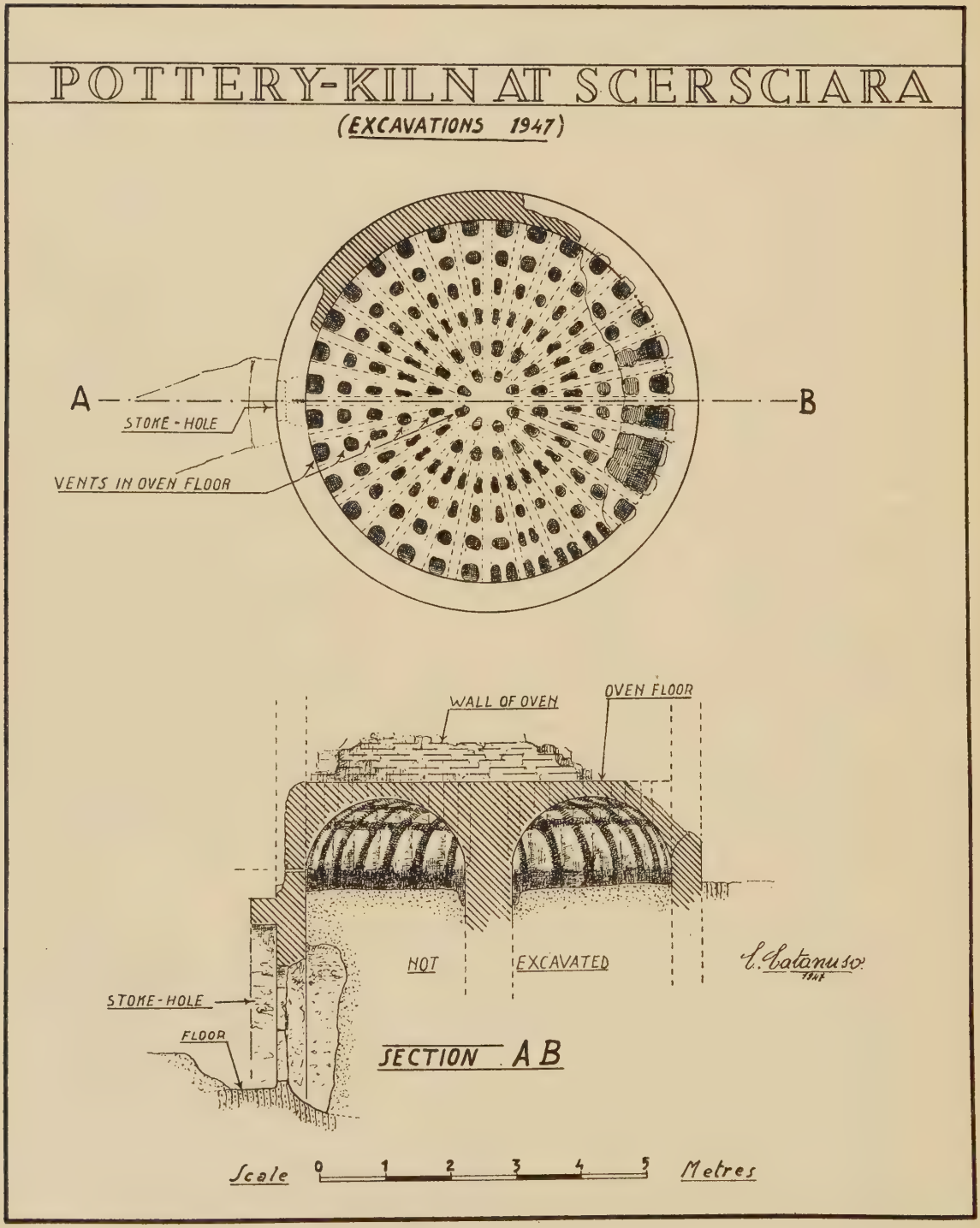
POTTERY-KILN AT SCERSCIARA
(EXCAVATIONS 1947)
A
B
STOKE-HOLE
VENTS IN OVEN FLOOR
WALL OF OVEN
OVEN FLOOR
NOT
EXCAVATED
L. Catanuso
1947
STOKE-HOLE
FLOOR
SECTION A B
Scale 0 1 2 3 4 5 Metres

FIG. 6.

by a broad ditch, which neither time nor agriculture have been able to efface, and they are therefore easily identifiable on air photographs, even when surface indications are scanty. The low, rectangular mounds, which these ditches surround, represent the ground-floors of the farmhouses filled in with the collapsed rubble from one or more upper storeys. The olive-farms of this area were therefore, at least during the period of their greatest expansion, tower-like structures of a type still to be found in very nearly perfect condition in the arid zones of the Sofeggin basin. In the Tarhuna area the higher rainfall has caused the collapse of the upper storeys.

Some fifteen sites of this type can be identified on the air photographs of the 20 × 5 km. strip in the heart of the area under review, and they are equally abundant outside the area of photographic cover. In most cases, however, surface study reveals little more than their overall dimensions, which vary from 10 to 30 metres square. In one instance only, Henscir Salamat (see below), is it possible to recover the interior plan, without excavation. Normally these farmhouses stand alone, and on the highest ground, but occasionally one finds two set close together. An example of this is to be found at Sidi bu Laaba, a little north-east of Breviglieri village-centre, where two ditched farmhouses, only a few metres apart, have produced curious late reliefs, and a Christian inscription recording the erection of a *turris* [33]—to be identified no doubt with one or other of these buildings. Another technical name applied to these tower-like structures was *centenarium*, which is attested by an inscription found by Caputo in the building of this type south of Sidi Ali ben Zaid.[34]

Of these sites, Henscir Salamat (fig. 7) alone merits detailed description, for the reasons already stated. It occupies a hill-top (ht. 486 m.), some two km. north-west of Medeina Doga; and some 100 metres to its north-west is a group of olive-presses, which no doubt belonged to the same estate. On the south edge of the broad ditch that surrounds the farmhouse is a smaller installation that is best interpreted as wine-press, since it has a pressing-floor and a tank, but lacks the characteristic monolithic uprights typical of the olive *torcularia*. The pressing-floor (2·34 × 1·64 m.) communicates by a spout with a deep tank, cement-lined, measuring 1·30 × 1·70 m., of which the bottom is 1·20 below the level of the pressing-floor.

The farmhouse proper is 17 m. square externally, and is entered by a doorway, flanked by monolithic jambs, on its south side. A small entrance hall, to the east of which a room contains what appears to be the base of a staircase, leads into the central courtyard, in which a cistern-mouth is visible. The rooms to east and west of the court have not been excavated, and it is uncertain whether they were each sub-divided into two smaller rooms. The north side of the building is occupied by three rooms, of which the central one also has a cistern in the floor. Henscir Salamat is, like the majority of the later fortified farmhouses, a building of no great architectural pretensions, its walls consisting of outer and inner faces of small irregular stones, with a central core of earth and rubble. Yet the amount of cut stone used for door-jambs and similar features, and the small but well-built wine-press show that Roman building techniques were well-known to its constructors. To judge from the surface remains visible on the

[33] Appendix III, no. 3. The site has been much mutilated by stone robbing, the inscription having been found in the course of those operations, during the laying out of Breviglieri colony. An eye-witness of the discovery pointed out the exact site to the writer.

[34] Appendix IV, site no. 30; Appendix III, inscription no. 7.

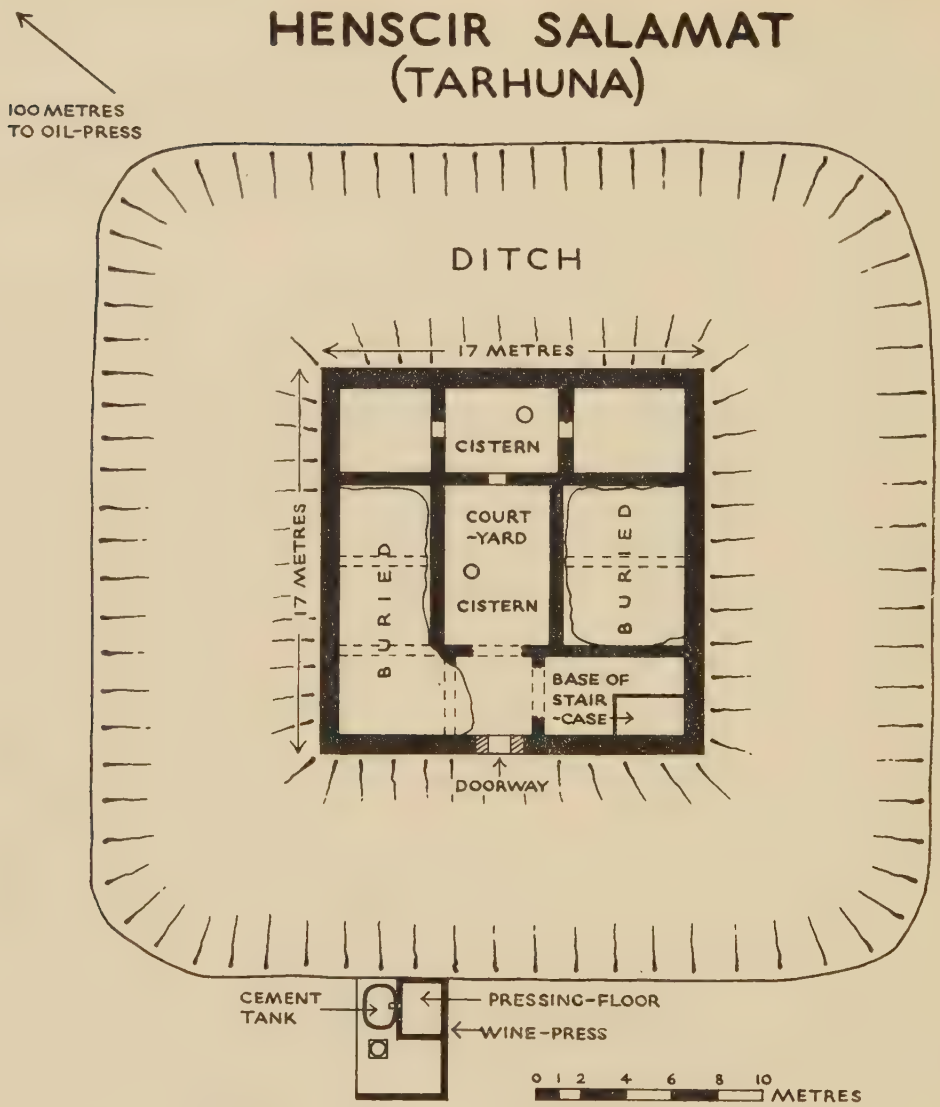

FIG. 7.—HENSCIR SALAMAT: PLAN OF FORTIFIED FARM (pp. 61–2).

similar sites in the Tarhuna plateau, the general arrangements of Henscir Salamat may be taken as typical of these fortified buildings.[35]

(7) *General Conclusions.*

Our picture of the Tarhuna plateau in the Roman period, as illustrated by the archaeological evidence, is necessarily incomplete. Until one or more olive-farm sites have been stratigraphically excavated and dated by the material found in significant

[35] Although there is some variety in the size of the buildings and the disposition of the rooms, the fortified farmhouses of Tripolitania almost invariably have upper storeys, an inner courtyard, and a single doorway in the outer walls (see some representative plans published by the writer in *JRS*, XL (1950), fig. 6).

layers, the economic history of this fertile and important region will remain obscure. Yet the existing evidence is not without a certain historical value.

For the pre-Roman period archaeology is still completely silent: Carthaginian coins are not infrequently found on the plateau,[36] but not in association with structures that could be considered contemporaneous. Aelius Lamia's road, and the sanctuary of Ammon on Ras el-Haddagia may reasonably be considered as marking the first influx of Roman influence into this eastern Gebel region, during the reign of Tiberius. The monuments of Lepcis Magna show that romanisation was already effective in that city under Augustus, and the extension of this process into the hinterland, at a slightly later date, would have been a logical step. Romanelli has suggested that the construction of the road was an essentially military undertaking: *si lanciava invece audacemente proprio nel cuore del paese nemico*.[37] Against this interpretation, however, it may be argued that the construction of the Ammonium of Ras el-Haddagia, contemporaneous with the road, would have been an anomalous undertaking if the road was at that time serving as a *limes*. The dedicatory inscription of the Ammonium and the remains of the sanctuary itself show clearly that it was erected by romanised craftsmen on behalf of a Libyan notable, a 'sheikh' of the 'Beni Masinkaw'. The neo-Punic title 'chief of the army in the territory of the Libyans', applied to Aelius Lamia is, as Levi della Vida points out below (Appendix I), a standard formula for *proconsul Africae*, and no implications should be drawn from it.

In these circumstances, while we must allow that Tiberian policy in the Tarhuna plateau may have been influenced by military considerations, we must not overlook the political and economic implications of that policy. As early as the middle of the first century BC Lepcis had been able to draw on the produce of 'hundreds of thousands' of olive trees, according to Gsell's computation[38]; and this substantial figure could only have been reached if the Tarhuna as well as the Msellata region came within the economic orbit of that city. The construction of the Tiberian road from Lepcis to the Tarhuna would have served to facilitate the export of olives to the expanding emporium, and at the same time to strengthen political control over the interior. Road and Ammonium alike suggest a negotiated agreement between the authorities on the coast and the native leaders of the Eastern Gebel; and if military operations were envisaged at all, they must have been intended to take place to the south or to the west of the road-head at Medeina Doga.

For the first and second centuries AD archaeological evidence is scanty, but we may perhaps assume a gradual extension of Roman influence and increased agricultural development. The tombstone of a veteran from near Gasr Doga (Appendix III, no. 1) and the remains of mosaics at Scersciara and El-Ubberat suggest the presence of a few immigrant settlers; but there is no evidence whatsoever of the large imperial or private estates of the type which existed in other parts of Africa, to which the famous inscription of Henscir Mettich in Tunisia [39] refers. Indeed the later healthy development of

[36] Information from Professor Caputo. A bronze Carthaginian coin was found in 1949, lying with a miscellaneous collection of useless articles left by local Arabs as offerings at the *marabut* of El-Khadra. It was removed, but to avoid offence to the *genius loci* a nickel lira coin was left in its place: the latter has since disappeared.

[37] Romanelli, *Epigraphica*, I (1939), 110.

[38] S. Gsell, 'L'huile de Leptis', *Libya (già Rivista della Tripolitania)*, I (1924–5), 41–6.

[39] J. Toutain, 'L'inscription de Henchir Mettich', and E. Cuq, 'Le colonat partiaire dans l'Afrique romaine', *Mem. Acad. Inscriptions*, XI, i (1907).

small self-contained olive-farms, with homesteads of semi-military type, argues against there ever having been a depressed class of coloni in the Gebel region.

During the third century AD the organisation of a deep limes zone, stretching southwards to the Wadis Sofeggin and Zemzem, gave the Gebel region an increased military importance as a base for military activities. Although there is no evidence that large forts were established in the Gebel, detachments of the Third Legion are recorded at Ain Wif on the Gebel road,[40] and it is not improbable that similar detachments were to be found at Medeina Doga. Milestones of Caracalla, Maximinus and Gordian III show that the Eastern Gebel road was, in common with the other official routes of Tripolitania, kept in regular repair throughout the century.[41] It is to this period that we can perhaps attribute the beginnings of the widespread establishment of fortified farmhouses, of which Henscir Salamat, described above, is a typical example. The density which these homesteads eventually reached suggests that a well-developed olive-farm of some 200 hectares (500 acres) could adequately support a Romanised Libyan family and its servants.

The spread of Christianity is sufficiently documented by the later inscriptions (Appendix III, nos. 3 and 4), and by the Chi-rho monograms of Constantinian type found both at Henscir Uhéda and at Sidi bu Laaba. It seems probable that by the end of the fourth century paganism was on the decline among the settled farmers of the Tarhuna; and that at some later, but uncertain, date the Ammonium of Ras el-Haddagia could be dismantled in accordance with the Theodosian laws, without offence to local feelings. The only church at present identified is that excavated by Caputo on the south side of the modern road near Sidi Ali ben Zaid: this has an added baptistery, which Ward Perkins has identified as of Justinian date, and the building itself must therefore be earlier.[42] Its decorative elements testify to a vigorous tradition of Christian art surviving throughout the fifth century and possibly later.

It is more difficult to judge the repercussions in the Tarhuna area of the political events that were taking place elsewhere in the province. One inscription (Appendix III, no. 2) seems to record the thanksgiving of a Christian family for the safety of its sons and estate after a barbarian raid: the text cannot be dated with precision, but certainly belongs to the latter part of the fourth century or to the opening years of the fifth. If, as has been suggested,[43] the Austuriani who raided the coast in the years 364–7 came from the desert areas south of the Gebel, it might be assumed that the Tarhuna plateau felt the first impact of their onslaught, and the inscription in question could be associated with that event. On the other hand, it seems more likely that the Austuriani were of Syrtic origin; whilst the events of 364–7, which happen to be recorded in detail by Ammianus, were certainly repeated during the subsequent half-century.[44]

For the closing decades of the Tarhuna's ancient history there is, in fact, a great

[40] R. G. Goodchild and J. B. Ward Perkins, 'The Limes Tripolitanus in the light of recent discoveries', *JRS*, XXXIX (1949), 81–95.

[41] R. G. Goodchild, *Roman Roads and Milestones in Tripolitania*, 11–13.

[42] This church, together with others in Tripolitania, will be published by Mr. Ward Perkins in *Archaeologia*, vol. 95.

[43] R. Bartoccini, 'La curia di Sabratha', *Quaderni di Archeologia della Libia*, I (1950), 33.

[44] It is important to recall that the detailed record of events compiled by Ammianus ceases in 378, and that there is no chronicle of comparable quality for the years that followed. The fact that an inscription (*IRT* 480) from Lepcis, belonging to the period 408–423, praises the *comes et dux* Ortygius for the measures taken against the Austurians shows that the invasions of 364–6 were only the beginning of a whole series of disasters. The events in the Pentapolis, recorded so vividly by Synesius, confirm this conclusion.

scarcity of documents. The region was Christian, populous, and agriculturally prosperous at the end of the fourth century, as seems attested by the archaeological evidence; and there is reason to believe that these conditions continued for at least another century and a half. It need not be assumed that the Vandal occupation of the coast after AD 455 had any serious effects on the life of the Tarhuna, which was no longer dependent on the prosperity of the coastal cities. The frontier organisation of the closing years of Roman rule had been so native in character, and so closely interwoven with the agricultural economy of the region, that its disbandment posed no particular problems, and resulted only in a greater measure of autonomy for the interior.

That the Tarhuna plateau was included in the zone known as the *regio Arzugum*, or the ecclesiastical *provincia Arzugitana*, is suggested by a number of late sources, and Corippus included the *Arzuges* among the enemies of Byzantine rule against whom John Troglita waged his Libyan campaigns.[45] It is probable, however, that relations between the Byzantine regime and the interior, after the Vandal defeat, were initially cordial, and that it was only at a later date, after experience of Byzantine mismanagement, that open conflict broke out. How far the Christian farmers of the Tarhuna plateau shared in the conflict, or were the victims of the pagan tribesmen who led the resistance, is obscure; but it is safe to assume that John's campaign brought no benefit to the countryside. It was in these years of the mid-sixth century, no doubt, that the social and economic decline of the interior first became pronounced. Later events and conditions accelerated the process, and in due course reduced the once-prosperous plateau to the condition in which Cowper found it in 1895.

R. G. GOODCHILD

APPENDIX I

THE NEO-PUNIC DEDICATION OF THE AMMONIUM AT RAS EL-HADDAGIA

By PROFESSOR GIORGIO LEVI DELLA VIDA

The dedicatory inscription of the Ammonium (Fig. 8) is cut on a single block of hard pink limestone, measuring 2·19 × 0·43 × 0·42 m. On the inscribed face the three lines of lettering lie within a slightly recessed die, 1·93 × 0·31 m., and the larger letters are uniformly 7·5 cm. high. The other faces of the block are well trimmed, but not finely tooled, and give the impression that the block was built into a structure, and not in any sense free-standing.

As found by De Mathuisieulx in 1901, the inscription consisted only of the two main pieces of the block, but three additional fragments, not known to Clermont-Ganneau, the first editor, have since been found. Fragment C was found by Aurigemma and Beguinot in 1910 and appears (slightly diplaced from its correct position) in the photograph published by the former in *Notiziario Archeologico*, I (1915), 41, fig. 1.

[45] R. G. Goodchild, 'The Limes Tripolitanus—II', *JRS*, XL (1950).

Fragments A and B were both found during the excavations of 1947, the former in Pit 2, the latter close to the surface on the south side of the Ammonium.

The following remarks aim only at a correct understanding of the wording of the inscription. The basic interpretation still remains that which was given more than forty years ago by the great Semitic epigraphist Clermont-Ganneau (*Recueil d'archéologie orientale*, VII, 86–114, cf. *Répertoire d'épigraphie sémitique*, no. 662); nothing essential was added by Lidzbarski (*Ephemeris für semitische Epigraphik*, III, 60–61), and some of the latter's criticism of Clermont-Ganneau's suggestions proves now to be unfounded. The few remarks jotted down by the present writer in *Libya* (*già Rivista della Tripoli-*

FIG. 8.

tania) III, 95–96, can be disregarded without inconvenience, as they have been superseded by further findings and research. Although Clermont-Ganneau was unable to evince a continuous sense from the text, most of his brilliant suggestions, which lacked documentary evidence at the time when they were first made, are now supported by fresh material and a closer examination of the stone. To be sure, a few passages remain unexplained, as is too often the case with neo-Punic inscriptions; however, the general meaning of the inscription can be considered as well ascertained.

The text follows, transliterated in Hebrew letters:

1. לאדן לאמן מאש אלם סת ומקדש בתאי וחלעזרפאת אש באנא ואיקדש
2. בשת רב תאחת רב מחנת בשד לובים לוקי עילי לעמיע בכסף בן
3. שעסידנעסב בן במרר אש בבנא מעסנכעו · בתצאתם בתם

Translation:

1. To the Lord Ammon, this (is the) beautiful(?) idol (*literally*: statue of a god) and the sanctuary of his temples and the porticoes, which were built and dedicated[1]

2. in the year of the proconsul over Africa (*literally*: the territory of the Libyans), Lucius Aelius Lamia, by $^{T}_{N}$ K S F son of

3. Shasidwasa$^{t}_{n}$ son of $^{T}_{N}$amrar, who belongs to the Sons of Masinkaw, with their annexes, at his expense.

Line 1. Some fresh evidence, which is now available about the spread of Egyptian cults into Tripolitania, supports Clermont-Ganneau's contention, opposed by Lidzbarski, that אמן means here Ammon and not (Ba'al) Hammon. Since 1905 מ(א)ש 'statue' has been found elsewhere, as early as the 10th century BC (inscription of Eliba'al of Byblos). שפער is still unexplained. The first letter may be, as both Clermont-Ganneau and Lidzbarski assumed, the relative pronoun used as a mark of the genitive, as is often the case in neo-Punic, and פער may mean the matter of which the idol was made (although (*marmor*) *parium*, as suggested by Lidzbarski, sounds very unlikely). One may think of an adjective, 'beautiful', on the analogy of Aramaic, but this suggestion, too, is far from satisfactory. Evidence for סת as a demonstrative pronoun, both masculine and feminine, is now bulky. Instead of בֵּ֫א, as was read by Clermont-Ganneau, the stone has undoubtedly בֵּ֫אי, which can only be the plural of a noun followed by a possessive suffix of the third person masculine singular: 'of his temples' (instead of 'de son temple', as Clermont-Ganneau has it). Why the plural was used, while the temple was obviously only one, is not entirely clear. וחערפאת ' and the porticoes', doubtfully suggested by Clermont-Ganneau, is sure: ח as an article instead of ה is due to assimilation to the following '*ayn* (see *Africa Italiana*, VI, 23). The following words, to the end of the line, read undoubtedly באנא ואיקדש; the upper apices of the broken *alif* in באנא have been supplied by the recently discovered fragment A. The verbal form איקדש (ifil), of which Clermont-Ganneau was not entirely sure, is now well-established (inscription of Bir Tlelsa, in *Ephemeris für semitische Epigraphik*, III, 288; Tripolitana 13 in *Libya*, III, 115–117, *Journal of Biblical Literature*, LXIII, 5; Tripolitana 30 in *Africa Italiana*, VI, 104).

Line 2 is preserved in its entirety, and was correctly read and explained by Clermont-Ganneau. תאחת, corresponding to *pro-*, as in *proconsul*, must have been a regular term of the language of administration: it is found in another inscription (Tripolitana 27, in *Africa Italiana*, VI, 4, where the first two letters are restored) in the same meaning as here, although its Latin counterpart is slightly different (*tribunicia potestate*). רב מחנת, 'the chief of the army', as a standard translation of *consul*, has been discussed at length elsewhere (*Africa Italiana*, VI, 8), and it was shown that the emphasis which the Punic term puts on the military aspect of the Roman consulate matches the Greek translation of *consul*, στρατηγὸς ὕπατος. No implications concerning Lamia's office

[1] The passive has been used, instead of the active of the neo-Punic text, in order to preserve the word sequence of the original.

in Libya should be drawn from it. Another instance of שד לובים, 'the territory of the Libyans', obviously corresponding to *provincia Africa*, has been pointed out by Clermont-Ganneau in a neo-Punic and Libyan bilingual inscription from Maktar (*apud* J.-B. Chabot in *Journal Asiatique*, 1918, I, p. 280 = *Punica*, p. 220 = *Recueil des inscriptions libyques*, no. 31; cf. J. Février in *Journal Asiatique*, 1949, pp. 87–88). The dedicator's name is Libyan, as well as the names of his father and grandfather. To the best of this writer's knowledge, none of them has been met with so far in Libyan, Punic, or Latin inscriptions. The initial letters of T K S F have been compared by Clermont-Ganneau to the beginning of the well-known name *Tacfarinas*. Names beginning with T K. . . . . are by no means scarce in Libyan inscriptions (see Chabot, *Recueil*, p. xxii), but names with an initial N K. . . . . are no less frequent (*ibidem*, p. xx), and *t* and *n* are not differentiated in the neo-Punic script.

Line 3. The patronymic, which was mutilated on the stone when first studied by Clermont-Ganneau, has been entirely restored by the finding of fragments B and C. The signs of the latter were not quite correctly read by the writer in *Libya*, III, 96; but the reading is now sure, as even the broken letters are unmistakeable, except for the last letter, which of course may be *t* or *n*. Shasidwasan or Shasidwasat (fully vocalised) is a new name, as is the grandfather's, Tamrar or Namrar (the second vowel may also be *i* or *u*); the numerous Libyan names beginning with N M R. . . . (Chabot, *Recueil*, p. xx) and, on the other hand, T M R N (*ibidem*, p. xxii) may be mentioned for the sake of comparison. Clermont-Ganneau was certainly right in assuming that the words מעסנכעו בנא mean 'the sons of . . .', and refer to a tribe. It should be added that the preceding letters . . . אש ב mean 'belonging to . . .'; a similar expression is found in an inscription from Sabratha (Tripolitana 35, in *Rendiconti dell'Accademia dei Lincei*, Ser. VIII, IV (1949), pp. 411–2), where one reads אש בעם אלפקי, 'who belongs to the people of Lepcis'. The last two words, which are only slightly damaged, were correctly read by Clermont-Ganneau, who however failed to grasp their meaning, and thought of תצאת as meaning 'borders'. The present writer endeavoured to prove that בתצאתם, which occurs frequently and is almost always followed by בתם, means 'with their external parts' (from the stem *y ṣ '*) and refers to the accessories, or annexes, of the buildings or monuments mentioned in the inscriptions (*Atti dell'Accademia delle Scienze di Torino*, LXX, 191). Professor J. Février, in a paper read in July, 1948, at the International Meeting of the Orientalists in Paris and partially published in *Actes du XXI^e Congrès International des Orientalistes*, Paris, 1949, pp. 103–4, denied the correctness of that explanation and suggested a different one, 'at their expense', which would fit the meaning of הוציא in late Hebrew. However, the personal suffix *-m*, being in the plural, cannot refer to the donor, who is single.[2] Therefore, one should assume an objective genitive, namely, 'at the cost of them'. Should Février's explanation be correct, בתם would have here its literal meaning of 'completely'; otherwise, it would mean 'at his expense', as in two bilingual inscriptions from the Theatre of Leptis Magna (Tripolitana 30 in *Africa Italiana*, VI, 107, and Tripolitana 32 in *Rendiconti dell'Accademia dei Lincei*, Ser. VIII, IV (1949), pp. 404–6), where it matches *de pecunia sua* of the Latin text.

[2] Février assumes that the suffix *-m* may refer to the singular; however, this point is still controversial (see the article in *Rendiconti dei Lincei*, cited above, p. 401).

Appendix II

CERAMIC INDUSTRIES IN ROMAN TRIPOLITANIA

Roman coarse pottery has been found in abundance during the Italian excavations at Sabratha and Lepcis Magna, and also during the more recent excavations of the British School at Rome: large quantities of pottery, most of it rather characterless, can also be picked up on the surface of the ancient sites in the interior of Tripolitania. It is evident that many, if not most, of these wares must have been manufactured locally, but the character and chronology of the Tripolitanian ceramic industries have still to be studied. The publication by Miss K. M. Kenyon of the abundant pottery found in stratified levels at Sabratha will no doubt establish a firm base on which a dated typology can be built up. Meanwhile, however, it may be useful to place on record some Tripolitanian sites at which Roman pottery was made.

The only Roman kiln-site in Tripolitania which has hitherto been published is that found in 1925 under the Centrale Elettrica of Tripoli (outside the walls of ancient Oea), and described by Professor R. Bartoccini in *Africa Italiana*, II (1928–9), 93–95. On this site, a workshop-enclosure was brought to light containing four circular kilns and some cisterns. Associated pottery, including one kiln-load still *in situ*, has been dated by Bartoccini to the second half of the fourth century AD, and the abandonment of the workshops attributed to the barbarian raids of that period.

The Tripoli kilns all had central pillars, which Bartoccini interpreted as having supported a dome, and their circular interior was divided into two levels: the lower level, elliptical, was close to the furnace, while the upper level, 'three-quarter-moon'-shaped, lay more distant from it. According to Bartoccini the furnace communicated with the oven itself by a high-level flue: *Le camere di cottura si aprivano verso il forno vero e proprio con uno stretto canale rettangolare, superiormente rialzato ad angolo acuto.* The general arrangements of the Tripoli kilns are closely paralleled by those of the Scersciara and Tazzoli kilns recently excavated by the writer; the main point of difference (unless there has been some error of interpretation) would seem to be that in the latter kilns the furnace opens directly into the low-level compartment of the oven.

Since the war three additional kiln-sites have been identified in Tripolitania, and kilns have been excavated on two of them. On all three sites large mounds of sherds and wasters surround the kilns, and some representative specimens of pottery have been collected and deposited in Tripoli Museum: they are almost exclusively thick-necked jugs of the type which were found on the Tripoli kiln-site, but a closer study of the material is to be desired.

The first of these additional sites lies on the north side of the main Tripoli-Homs road, at Kilo 102, between Fondugh en-Naggaza and Homs. It is on high ground at the head of the Wadi Giabrun es-Seghir, and marked by a high mound, consisting almost entirely of pottery sherds, on the verge of the modern road. Large masses of Roman concrete nearby seem to represent cisterns. This site was first observed in 1943 by Mr. J. B. Ward Perkins, at whose suggestion the writer dug out one of the kilns in 1947. The kiln (fig. 9B) proved to be remarkably similar to those described by

Bartoccini. It was circular, with an inner diameter of 2·60 m., and its low-level compartment, heavily marked by burning, communicated directly with the exterior furnace by a flue 40 cm. wide. In the centre of the oven, and resting on the edge of the upper floor, was the base of a central pillar of rectangular section. The outer walls of the kiln were built of clay blocks, but their width was not ascertained. No remains of the last load were found in the kiln, the filling of which consisted of ashes and wasters from

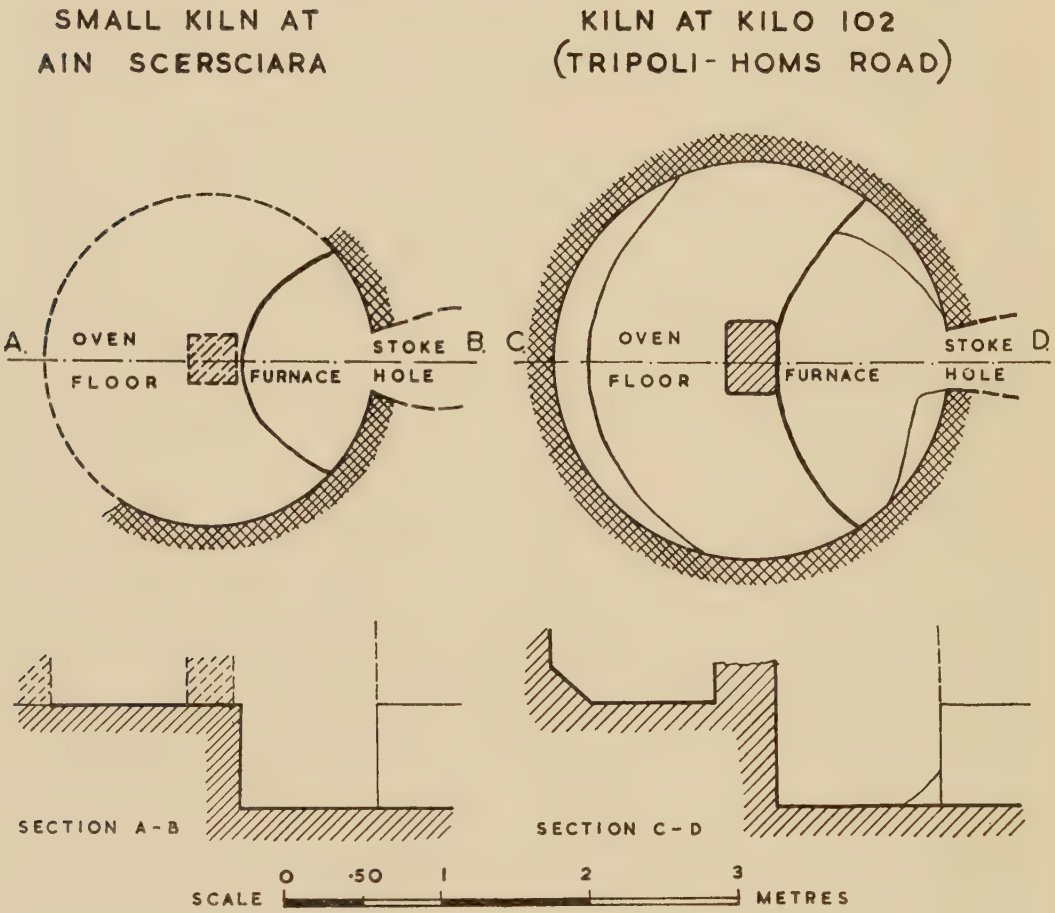

FIG. 9.

the surrounding dumps. Two amphora-handles found on the surface of this potter's works both bear a potter's stamp (fig. 10A), which can reasonably be accepted as the trade-mark of this particular establishment, although its exact meaning is obscure.

The second kiln site to be identified recently is that at Ain Scersciara, which has already been described above (p. 59). In addition to the large kiln there illustrated (Fig. 6), the remains of a small kiln of the Tripoli type were also uncovered. Although much damaged, its plan and section (fig. 9A) show it to be of basically the same type as that excavated on the Homs road at Kilo 102. Here again the furnace communicated

directly with the lower chamber, and it is clear that this lower chamber must be considered as a combustion chamber and not as a part of the oven: pottery stacked in it would have been badly distorted by the heat.

The third site, identified in 1948, lies some 25 km. to the south-west of Ain Scersciara, and 4 km. west of Tazzoli village centre. The rough track (used largely by esparto-grass lorries) from Tazzoli to Ain Wif crosses the deep Wadi el-Cadra and then climbs to a ridge on which stands the cistern Magen Burnia. About 800 m. before reaching Magen Burnia this track cuts through a horse-shoe shaped bank which consists entirely of pottery sherds. Large quantities of burnt clay blocks testify to the existence of kilns, but none have yet been excavated. Heavy amphora-rims of the type found on all the other kiln-sites abound, and one handle bore a potter's mark (fig. 10B), probably to be related to this workshop.

These three pottery-works all lie in what may be described as 'Gebel country', and their siting is probably to be explained by the presence of clay seams in the limestone outcrops. At Ain Scersciara this clay is still exposed, and appears to be of excellent quality. The Homs and Tazzoli sites do not seem to have a good water-supply, but this difficulty could probably be overcome by the use of cisterns and wells. When one considers the abundance of fortified farmsteads of the later Roman period scattered throughout the Gebel and further to the south, it will readily be understood why these ceramic industries often came into existence so far from the urban centres, and future archaeological survey will undoubtedly bring to light additional kiln-sites along the whole length of the Gebel.

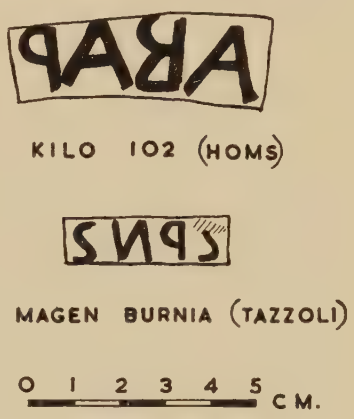

FIG. 10.—POTTERS' STAMPS.

Two types of kilns seem to be represented: (*a*) large kilns of the type found almost intact at Scersciara, with a perforated oven floor supported by a central column and vaulted ribs; unfortunately it was not possible to clear out the combustion chamber of the Scersciara example, so that its detailed arrangements are not clear; and (*b*) smaller kilns of the Tripoli type, as found also at Homs and Scersciara. Here we have the same circular form and central pillar, but the latter seems to have served to support the oven dome, and the actual firing floor had no perforations, the combustion chamber being in front of it, rather than below it. It has already been remarked that the Tripoli examples, if the published description is exact, had a high-level flue from the furnace, whereas in both of the more recently excavated specimens, the furnace opens directly into the combustion chamber. In any case, we must, it seems, reject Bartoccini's suggestion that both upper and lower floors were used to contain pottery during the firing.

In the absence of firm dating evidence, and in the existing obscurity of the typological development of Tripolitanian wares, it is hardly possible to fix a precise date for these Gebel ceramic industries. Certainly there is a good *prima facie* case for a late date, for thick-necked amphorae of the type found on all these sites have, according to Pro-

fessor Caputo, been found in the late Roman levels at Lepcis Magna. Moreover, the expansion of ceramic industries in the countryside equates well, historically, with the increasing establishment of fortified farms in the interior during the late third and fourth centuries, and with the gradual decline of the coastal cities and their imports.

The wares manufactured on these Gebel sites are not, in themselves, of a character to stimulate great archaeological interest. Superficial examination appears to reveal no trace of a local ceramic art comparable, say, to the New Forest and Castor wares of Britain: the products of the Tripolitanian potters were strictly utilitarian. Yet a detailed excavation of these kilns, and examination of their products, would prove of the greatest utility for investigators of the occupation-sites in the interior, where the problem of establishing an absolute chronology is always acute. The three sites described above are all easily accessible, and it is to be hoped that some student of Roman ceramics will devote to them the attention which they clearly merit.

Appendix III

THE CLASSICAL EPIGRAPHY OF THE TARHUNA REGION

In the area of the Tarhuna plateau covered by the zone map (fig. 1) the ancient inscriptions at present known total nine. On other parts of the Tarhuna plateau, outside the limits of the map, there are a few additional texts, none of any great importance. Of these nine inscriptions, one, the dedicatory inscription of the Ammonium on Ras el-Haddagia, is in neo-Punic: it is fully described and translated by Professor G. Levi Della Vida in Appendix I above. Of the remaining eight, five are in Latin (in some cases of a rather rudimentary type), and three are of the type best described as 'Latino-Libyan', being inscribed in Latin characters in an indigenous language which seems to contain both Libyan and Punic elements, but which cannot yet be confidently translated. Inscriptions of the latter type are relatively abundant in the interior of Tripolitania, and are discussed in the present writer's article 'The Latino-Libyan inscriptions of Tripolitania', *Antiquaries Journal*, xxx (1950), pp. 135–144.

The Latin and Latino-Libyan inscriptions of the interior of Tripolitania will be included, with measurements and full bibliographical references, in the forthcoming collection of *Inscriptions of Roman Tripolitania*, edited by Miss J. M. Reynolds and Mr. J. B. Ward Perkins and published by the British School at Rome. It will therefore suffice, for present purposes, to list those inscriptions which have been found in the area under review, and to give the texts of the more interesting specimens, with such commentary as is appropriate to the problems already discussed above in our description of the Tarhuna zone. The evidence of the milestone inscriptions has already been considered (pp. 46–7) in dealing with the ancient communications of the Tarhuna plateau, and need not be repeated here.

(a) *Latin inscriptions*

(1) (=*IRT* 872). Inscription in good lettering of the first or second centuries AD, recording the erection of a funerary monument, for himself, by C. Clodius Paulus, of the tribe Col(lina), a *veteranus*.

This inscription, published by Cagnat and Merlin in *Inscriptions Latines d'Afrique* (p. 2, no. 3), was reported by M. Hegly as having stood in the facade of a small mausoleum, since demolished, some 800 metres south of the large mausoleum of Gasr Doga (*BAC*, 1910, ccvii). It is now in Tripoli Castle Museum. Although the exact find-spot is no longer identifiable, the mausoleum of this veteran must have stood on the northern outskirts of Medeina Doga.

(2) (=*IRT* 875). Inscription (pl. XIII, 2) in lettering of the late fourth or early fifth centuries AD, found on an unidentified site in the Breviglieri–Tarhuna area. When seen by the writer in 1947, the inscribed stone was in the garden of a colonist's cottage below the eastern slopes of Ras el-Haddagia. Inquiries made by Professor Caputo have ascertained that the stone came originally from an uncertain site close to the modern road from Breviglieri village centre to Tarhuna. It reads:

Flavii Sebentius c(en)t(e)n(arius)
et Stiddin eius con
iunx hunc locum
didicarunt O bonum [i]ni
tium natisqui filiis concil
ium saluis libiris
cum filicitati trium
fanti Binaitir possissu

The abbreviation CTN in line 1 is not, apparently, paralleled elsewhere, but its expansion into *centenarius* seems certain (cf. R. G. Goodchild, *Reports and Monographs of the Department of Antiquities in Tripolitania*, No. 2 (1949), p. 34). The name Stiddin is recorded elsewhere in Africa (*CIL* VIII 10686; *IRT* 236) and is presumably of native origin. The O following *didicarunt* probably represents an intended monogram cross, similar to that which we find in the following inscription (3), but never completed. The meaning of the remaining part of the text is obscure, but the intention seems to have been to record that the dedication of this *locum* (whether farmhouse or church is uncertain) was to be a *bonum initium* for the sons of the family. Binaitir was presumably the name of the estate. Although *salvis* may be intended in a Christian sense, it seems possible that the general tone of the inscription, with its emphasis on the safety of family and estate, may be an indirect reference to some danger happily averted, in which case one would think of a barbarian invasion. On the other hand, the acclamatory nature of these Christian inscriptions must be borne in mind.

(3) (=*IRT* 876). Inscription, in lettering of the late fourth or early fifth centuries, very similar in form and content to (2). It was found, about 1935, in the course of removing stones from the ruins of two adjoining ditched buildings at Sidi Bu Laaba, 2 km. north-east of Breviglieri village centre. The discovery was reported to the Superintendency of Antiquities at Tripoli by Professor Aurigemma, who was at that time visiting Tarhuna. The stone is now in Lepcis Magna Museum, together with two crude bas-reliefs of hunting-scenes, and a large Christian monogram found on the same site. The hunting reliefs, each of which includes a Roman eagle, are closely paralleled by a relief seen by De Mathuisieulx *in situ* beside an inscription over the doorway of a fortified farmhouse at Muagen Tuansia, in the Wadi Merdum a little west of Bir Gebira (*Nouvelles Archives des Missions Scientifiques*, XII (1903), 30 and Pl. XXI, 1–2). The contemporaneity of the Sidi Bu Laaba and Muagen Tuansia sites can hardly be doubted. The inscription reads:—

Fl(avius) Gaudentius
bono tuo proce
das et i(n) nomine
(C)hristi omnes genus
Seberi bibant (*monogram cross*)
hec turis fabric
ata est ANOTAP LSA (or LGA)
ETRAVLIHORDETFOLXXX

The inscription clearly records the erection of a *tur(r)is*, no doubt one or other of the two ditched buildings on the site of which it was found, by Flavius Gaudentius, who must presumably have belonged to a family of *Severi*. It is interesting to note that an inscription at Mizda (*IRT* 884) appears to record the repair of the tomb of Iulius Severus son of Masinthan by a certain Gaudentius. Although the Mizda inscription is of the same period as that at Sidi Bu Laaba, it would be rash to assume that the same Gaudentius is recorded in

both texts; but it would seem that the name Gaudentius was connected with a family of Severi (perhaps native Libyans settled as *Limitanei* under the Severan emperors) in Tripolitania.

The meaning of the last part of the inscription, following *fabricata est*, is highly obscure. Although the letters LSA occupy the right-hand ansa, it is clear that they are meant to follow on after ANOTAP: so, too, the figure XXX presumably follows FOL. At first glance the latter suggests a sum of money, *fol(les)* XXX; but it is difficult to see why so insignificant a sum should be mentioned in a building inscription (H. Mattingley, *Roman Coins* (1928), 229, n. 3, quotes St. Augustine in illustration of the low value of the *follis* at that period). An alternative explanation would be to interpet the first three letters after *fabricata est* as *an(n)o*, and to assume that the tower was built in the 30th year of TAPLSA, RAULIHORD and FOL. . . . But these names are not recognisable as Libyan, and it is difficult to imagine why so cumbrous an era should ever have been devised. Until further evidence is forthcoming, the meaning of the final part of this text must remain obscure.

(4) (=*IRT* 874a). Fragmentary inscription in late lettering similar to that of (2) and (3), found by Professor Caputo at Sidi Bu Zeriba, an ancient site on the edge of the plateau some 8 km. due north of Breviglieri village centre. Unfortunately the stone was broken by the Arabs who dug it out, and the only intelligible part of the text is the opening phrase:—

In nomine pa[tris et fili]
et sp(i)r(itus) sanct(i)
. . . . . .

The seven lines which follow are too mutilated to be restored, but they were probably of similar content to (2) and (3).

(5) (=*IRT* 874). Fragmentary inscription seen by Cowper (*Hill of the Graces*, 238, n. 1) 200 yards north of Gasr Doga, and now lost. No information as to the shape of the stone or the type of lettering is given by Cowper, and it is impossible to judge its character. The last line, recorded as MXXXV, suggests a milestone fragment; but this may be a misreading of *vixit an]n xxxv*.

(b) *Latino-Libyan inscriptions*

(Texts of Latino-Libyan type will be published in facsimile in the forthcoming *Inscriptions of Roman Tripolitania*, since the forms of the letters are often far from clear, and at least two non-Latin letters are used.)

(6) (=*IRT* 873). Inscription cut in a recessed die of *tabella ansata* type on a pointed stela, 2 m. high, lying on the surface in the northern necropolis of Medeina Doga (above, p. 50). The text, of five lines, appears to record the erection of this monument to a certain Muthunilim, by members of his family. The name Muthunilim (cf. *CIL* VIII, 10525, 23904) is of Punic origin.

(7) (=*IRT* 877). Inscription, flanked by low reliefs of an eagle and a lion, in late letters similar to those of (2) and (3) (pl. XIII, 1). It originally stood over the doorway of a fortified building, with adjacent church, excavated by Caputo on a hill-top close to the south side of the Breviglieri–Marconi road, some 8 km. east of Breviglieri village centre. It is now in Lepcis Museum. The text (cf. *Reports and Monographs of the Department of Antiquities in Tripolitania*, No. 2 (1949), p. 33) has, as its first line, the word CENTENARE which is evidently to be identified with the military term *centenarium* applied to a small frontier outpost. The remaining part of the text is obscure except for what appears to be a name *Marci C(a)ecili Bumupal*, perhaps, like the Sebentius and Gaudentius of (2) and (3), the owner of the estate of which this homestead was the centre.

(8) (=*IRT* 877a). Inscription or graffito in late letters cut on a block which formed part of the architectural ornament of the church on the same site as (7). Apart from the word *bibas*, the text is quite unintelligible, and it probably contains Libyan elements. This inscription was not visible when the block was in position, so it was presumably cut by a mason.

Although the tally of inscriptions from the Tarhuna plateau is relatively small, it will be noticed that these texts come from some seven different sites, none of them of great extent and importance. The high proportion of late texts is in the main attributable to the fact that it became customary, from the fourth century AD onwards, for the construction of farmhouses, etc. to be recorded epigraphically by their owners. This custom, originating probably from the example of the purely military constructions of

the Severan period (cf. the inscriptions over each of the four gateways of the fort at Bu Ngem) became widespread in Tripolitania, as it did also in Northern Syria during the same period. It can hardly be doubted that a fair proportion of the ditched farm-sites described above (p. 61) would yield, on excavation, their original dedicatory inscriptions.

The problems raised by the use of Latin and Latino-Libyan inscriptions in the same area are too complex to be discussed here; for some initial comments, the reader is referred to the paper quoted at the beginning of this appendix. One fact seems clear, that the two types of inscriptions were being cut simultaneously during the fourth century; and it is noteworthy that those texts which show clear signs of Christianity are invariably in Latin, even if of a rather rudimentary type. It seems probable, therefore, that the Latino-Libyan texts are predominantly (though not exclusively, as the case of inscription (8) shows) pagan.

Appendix IV

A SHORT LIST AND CONCORDANCE OF ANCIENT SITES ON THE TARHUNA PLATEAU

Approximately one hundred ancient sites are marked on that section of the Italian 1/100,000 map of the Tarhuna area (Sheet 1475 of the Istituto Geografico Militare's survey of Libya) which is the subject of the present study (cf. fig. 1), The density of ancient occupation is therefore considerable and the compilation of an archaeological inventory is handicapped by the very abundance of surface remains. The frames of olive-presses and the outlines of ditched farmhouses are easily recognisable, but there are many other sites, the character of which can be determined only by excavation. In these circumstances it is hardly possible, as yet, to compile a definitive and classified list of ancient sites. More extensive archaeological reconnaissances are required on the ground, and relatively complete air photographic cover would be needed to achieve the best results.

Meanwhile, however, it may be useful to give the exact topographical locations of those sites already described by Cowper in the *Hill of the Graces*, and those other sites more recently recorded. It has already (p. 44) been pointed out that Cowper's topographical descriptions are extremely reliable, but the map which he published is, of course, entirely superseded by the modern large-scale surveys. Since the place-names printed on the modern maps are not always the same as those recorded by Cowper, and since the formation of the Breviglieri village settlement and of the adjacent private 'concessioni' has completely changed the face of the Tarhuna countryside, it is not easy for any person unfamiliar with the terrain to identify on the map those places described in Cowper's book. The following concordance may help to overcome this difficulty.

The map-references given in the last column of the inventory are obtained from the grid printed on the British editions of the Italian 1/100,000 maps: the original maps are not gridded. The *Libyan Grid*, adopted during the war for this purpose, is based on Longitude 18° East, and consists of large 100-km. squares (denoted by letters of the

alphabet) sub-divided into 1-km. squares, each numbered by two figures of 'eastings' and two of 'northings'. Thus the full map-reference consists of one letter followed by two groups of three figures, the last figure of each group representing the distance in hundreds of metres from the south or west margins of the small squares. It is to be hoped that future editions of these Libyan maps may combine the cartographic quality of the Italian originals with the convenience of the metrical grid, which—as the Ordnance Survey has already recognised in Britain—is of value for the activities of peace, as well as those of war.

A. *Sites recorded by Cowper*

(Note: The numbers in brackets, after the inventory number, are those used by Cowper in listing the sites he examined. His sites 1–9 and 35–59 fall outside the limits of the region under review: a few other of his sites have not yet been securely identified on the ground. Place-names in *italics* are marked on the modern 1/100,000 maps: in such cases the form of the place-name shown on the map has been adopted in preference to Cowper's.)

In this and the following list the following abbreviations have been adopted: O.P. (olive-presses); D.F. (ditched farmhouse); Inscr. (inscription).

1 (10)	*Gasr Doga*. Large mausoleum; cisterns; inscr.	L 958 227
2 (11)	Hill *495*, 1 km. NE of Gasr Doga. O.P.	L 967 235
3 (12)	Miscellaneous ruins (? Medeina Doga)	(Site 27, below)
4 (16)	Sajit el-Haj Ibrahim. D.F.; O.P.	L 998 192
5 (17)	*Sidi Mahmud* (Ras el-Id). O.P.	L 998 194
6 (18)	Hill *460*, 1 km. SW of Si. Mahmud (Ras el-M'shaaf). Large farmhouse, without ditch	L 990 190
7 (20)	*Sidi Ahmed el-Uhesci* (Kom es-Las). O.P.	L 985 155
8 (25)	*Ras el-Maeghel*. D.F.; O.P.	M 035 155
9 (26–7)	*Sidi Ahmed ben Dachil* (Senam el-Jereh). D.F.; O.P.	L 947 120
10 (28)	*Sidi el-Hag Said* (Kom el-Lebet). O.P.	L 946 151
11 (29)	*Sidi Com Saud*. D.F.	L 957 164
12 (30)	El-Khadra. Mausoleum and batum tree	L 968 180
13 (31)	Ras el-Haddagia. Temple of Ammon. Pl. XI. 1; inscr.	M 010 180
14 (32)	*Breviglieri* village square (Senam el-Thubah). D.F.; O.P.	M 019 175
15 (63)	*Sidi Bu Laaba* (Ras el-Benaieh). D.F.; inscr.	M 036 195
16 (64)	*Zaviet el-Medeni*. D.F.; O.P.	M 008 198

B. *Sites not recorded by Cowper*

17	*Ras Gassciut*. D.F. (Pl. XII, 1)	L 863 167
18	*Tarhuna* village. D.F.	L 890 172
19	*Tarhuna* village. Christian catacomb? (Roman building with mosaic in this area)	L 891 168
20	*NE of Sidi el-Garib*. D.F. (Pl. XII, 2)	L 892 197
21–3	*Ain Scersciara*. Portico with mosaic; pottery works; D.F.	L 885 207
24	*Bu Tuil*. Mausolea; stone relief	L 900 250
25	Henscir Salamat. D.F. (Fig. 7)	L 944 228
26	Henscir Uhéda. D.F.; Christian monogram	L 957 220
27	Medeina Doga. Road-station (Mesphe). (Fig. 2)	L 957 211
28	1 km. NW of *Zaviet el-Medeni*. Milestones	M 002 204
29	*Sidi bu Zeriba*. Inscr.	M 010 255
30	1½ km. SW of *Sidi Ali Ben Zaid*. Farmhouse; Christian church; inscr.	M 095 176

(Note: To the east of Site 30 is the head of the Wadi el-Mé, which has a well-preserved series of Roman dams. These, and other remains in the area of the Wadi el-Gsèa, are being investigated by Mr. E. D. Oates, Rome Scholar at the British School. Cowper has described some of the Wadi Gsèa sites in *The Hill of the Graces*, 268–274 (sites 44–49).)

The distribution of the sites on the Tarhuna plateau calls for brief comment. It will be seen from Fig. 1 that, in general, the ancient sites bear little relationship to the water-courses. The springs at Ain Doga and Ain Scersciara gave these areas a special importance, but elsewhere the ancient farms and their associated olive-presses tend to occupy the higher ground. The siting of the tower-like farmhouses on high ground was, no doubt, influenced by considerations of security and the importance of good observation over the whole of the estate. In the areas of the Sofeggin basin south of the Tarhuna Gebel, the Roman farmhouses invariably occupy the sides of the wadis, the beds of which were terraced and cultivated, and the intermediate plateau between the wadis is barren of ancient remains (cf. the sketch-map of the Wadi Merdum area, *JRS*, XL (1950), p. 32). One is therefore perhaps justified in calling the homesteads of the Gebel area 'Hill Farms', and those of the Sofeggin basin 'Wadi Farms'. In the latter areas olive-cultivation was the exception rather than the rule, as is shown by the scarcity of olive-presses.

R. G. G.

THE ROMAN BRIDGES OF THE VIA FLAMINIA

THE article that follows is the result of two years spent in Italy under a scholarship of the British School at Rome. The writer's original intention was to attempt a general study of ancient bridge-construction in Italy. It soon became obvious, however, that this was an almost impossible task, owing to the lack of adequately published material. On the great roads leading out of Rome, comparatively little original work has been done in the last thirty years; and if the destruction of ancient roads and of their attendant structures continues for much longer at the present rate, there will soon be little left to publish. The damage done during the late war was very considerable; and although a damaged bridge may in some ways be more rewarding than an intact one, a bridge that has been both damaged and reconstructed is of very little archaeological interest indeed.

For these reasons, it has seemed that the immediate need is not so much for a general work, which would necessarily be incomplete, as for a straight-forward description of the remains of bridges along some part of the ancient road-system of Italy, together with such comment as seems necessary to point out the problems involved. Various factors have determined the choice of the Via Flaminia. For one thing, its topography may be regarded as reasonably certain. For another, its importance as the main route from Rome to the Po Valley, and the difficult country through which it runs during the latter part of its course, ensured that it was as well constructed and maintained as any other road in Italy, and is likely, therefore, to afford a good basis for further research elsewhere.

Since its content is mainly factual, this article takes the form of a simple catalogue; and although some attempts at chronological and other generalization have been made, these are on the whole subordinate to the description. The following conventions have been observed throughout. The maps used are those of the 1 : 50,000 scale, I.G.M. (Istituto Geografico Militare) and G.S.G.S. (British military) series: reference is by sheet-number and, within the sheet, by latitude and longitude (the latter calculated from the meridian of Rome), since the I.G.M. maps are not provided with a grid. Where the ancient and modern roads coincide, a kilometre reference is given where possible; and unless otherwise stated, this corresponds to the distance from Rome, measured along the modern Via Flaminia, according to the present arrangement of the kilometre stones. The words 'left', 'right', 'near', and 'far' are used from the point of view of the traveller leaving Rome; similarly, the arches and piers of bridges are numbered from the end nearest to Rome.

Bibliography. The oldest work dealing specifically with ancient remains along the Via Flaminia is Montecchini's, which describes the road from Ponte Voragine to Fano as it was seventy years ago. The standard description of the whole road is to be found in Ashby and Fell's article in the *Journal of Roman Studies* for 1921. Martinori's *Via Flaminia* of 1929 contains much useful information on the history of the Flaminia

during the Middle Ages. Finally, Dr. Blake, in her work on Roman construction in Italy, has collected and analysed most of the information already available.

The following works are cited in abbreviated form:

Anderson–Spiers–Ashby	W. J. Anderson, R. Ph. Spiers, and T. Ashby, *The Architecture of Ancient Rome*, London, 1927.
Ashby–Fell	T. Ashby and R. A. L. Fell, 'The Via Flaminia', *Journal of Roman Studies*, XI, 1921, pp. 125–90, pls. IX–XVIII.
Becatti	G. Becatti, *Forma Italiae*, VII, i, Rome, 1938.
Blake	M. E. Blake, *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus*, Washington, 1947.
Choisy, *AB*	A. Choisy, *L'Art de Batir chez les Romains*, Paris, 1873.
Choisy, *HA*	A. Choisy, *Histoire de l'Architecture*, Vol. I, Paris, not dated.
Delbrueck	R. Delbrueck, *Hellenistische Bauten in Latium*, Strasburg, Vol. I, 1907, Vol. II, 1912.
Durm	J. Durm, *Die Baukunst der Etrusker, die Baukunst der Römer* (*Handbuch der Architektur*, Pt. II, Vol. I), 2nd ed., Stuttgart, 1905.
Eroli	G. Eroli, *Notizie Storiche del Celebre Ponte Rotto di Augusto presso Narni*, 3rd ed., Narni, 1900.
Frothingham	A. L. Frothingham, *Roman Cities in Northern Italy and Dalmatia*, London, 1910.
JRS	*Journal of Roman Studies.*
Martinori	E. Martinori, *Via Flaminia*, Rome, 1929.
Montecchini	P. Montecchini, *La Strada Flaminia nel Tratto da Ponte Voragine alla Città di Fano*, Pesaro, 1879.
Nibby	A. Nibby, *Analisi della Carta de' Dintorni di Roma*, 2nd ed., Rome, 1848–9.
Not. Scav.	*Notizie degli Scavi di Antichità.*
PBSR	*Papers of the British School at Rome.*
Platner–Ashby	S. B. Platner and T. Ashby, *A Topographical Dictionary of Ancient Rome*, Oxford, 1929.
RE	A. Pauly, G. Wissowa, and others, *Real-Encyclopädie der Classischen Altertumswissenschaft.*
Riis	P. J. Riis, 'The Etruscan City Gates of Perugia', *Acta Archaeologica*, V, 1934, pp. 65–98.
Röm. Mitt.	*Mittheilungen des Deutschen Archaeologischen Instituts, Roemische Abteilung.*

During the preparation of this article I have been indebted especially to Mr. J. B. Ward Perkins, without whose guidance it would probably never have been completed, and to numerous others who have contributed suggestions, photographs, and references; among these to Mr. R. Gardner of Cambridge, whose photographs of bridges on the Via Appia and elsewhere have been invaluable.

A. VIA FLAMINIA: THE MAIN ROUTE (pp. 79–113).

1. *Pons Mulvius* (pl. XIV, 1–2).

Map. 150 IV(Roma), 41°–56′–05″ N, 00°–00′–05″ E.

Ancient authors;[1] Livy, XXVII, 51; Aur. Vict. *Vir. Ill.*, 72, 8; Amm. Marc., XXVII, 3, 9; *Mon. Anc.* (Latin), IV, 19–20; (Greek), XI, 6–9; Dio Cassius, LIII, 22; Zosimus, II, 15–16; Procopius, *BG*, I, 19; III, 24.

Modern Authors. Nibby, II, pp. 580–8; Delbrueck, I, pp. 3–11, pl. II; II, p. 70, pl. II; T. Frank, *Roman Buildings of the Republic* (*Papers and Monographs of the American Academy in*

[1] A further list will be found in Delbrueck, p. 3.

Rome, no. 3), Rome, 1924, pp. 141–2; Ashby–Fell, p. 137; Martinori, pp. 36–48; G. Tomassetti, *La Campagna Romana*, vol. III, Rome, 1913, pp. 232–7; Blake, pp. 134, 137, 212–3, etc.; F. Münzer, W. Kroll, H. Philipp, in *RE*, XVI, i, 516–8.

Identification. The identification of the modern Ponte Milvio, formerly Ponte Molle, with the ancient Pons Mulvius, may be regarded as certain. That it crossed the Tiber appears from Cicero (*in Cat.*, III, 2, 5), while the Latin text of the *Monumentum Ancyranum* shows that it carried the Via Flaminia. There is no other bridge that will fulfil both these conditions. Piranesi[2] maintained that the original Pons Mulvius was represented by a large mass of concrete that stood in the river some distance further up-stream. This is still visible near the N bank, some 800 m. above the bridge. It does not appear to be *in situ*, and is almost certainly of Imperial date, to judge from the *caementa*, which are of selce (lava) with occasional courses of travertine.[3]

History. As to the original building of the bridge, history can tell us nothing. Some sort of a bridge must have existed at least since the building of the Via Flaminia in 220 B.C., and indeed Livy mentions the Pons Mulvius by name in connexion with the arrival of the messengers with the news of the battle of the Metaurus in 207.

The original structure was perhaps not very durable, for in 109 B.C. it was necessary for M. Aemilius Scaurus, as censor, to undertake what was, if not a complete rebuilding, at least a very thorough restoration. The words used by Ammianus, *struxisse superior dicitur Scaurus*, and by Aurelius Victor, *M. Aemilius Scaurus . . . censor . . . pontem Mulvium fecit*, strongly suggest the former, while the extant remains show no sign of work earlier than that now universally attributed to Scaurus. In particular, the use of large quantities of travertine in the piers makes a third-century date extremely unlikely.[4]

Of the subsequent structural history of the bridge we have very little positive information. The Latin version of the *Monumentum Ancyranum* gives it, together with the unidentified Pons Minucius, as one of the two bridges that Augustus found no need to repair at the time of his general restoration of the Flaminia in 27 B.C. According to Dio an arch (or arches) was erected on it in honour of Augustus, to commemorate this restoration. This is perhaps represented on a number of coins of 17–16 B.C., with the legend QUOD. VIAE. MUN. SUNT.[5] The types, however, are so variable that no conclusions may be drawn from them.

Nothing further is known of the Pons Mulvius until A.D. 312, when it is mentioned in connexion with the battle of Saxa Rubra and the subsequent flight and death of Maxentius. Delbrueck (pp. 3–4) supposes a restoration, partly in wood, by Maxentius, a supposition based on Zosimus, II, 16, Μαξεντίου . . . . . τὴν γέφυραν ἣν αὐτὸς ἔζευξε διαβάντος . . . ἴετο διὰ τῆς τοῦ ποταμοῦ γεφύρας ἐπὶ τὴν πόλιν, οὐκ ἐνεγκόντων δὲ τῶν ξύλων τὸ βάρος ἀλλὰ ῥαγέντων . . . There is no reason for connecting this bridge, which Maxentius is said to have built himself, with the Pons Mulvius. In the preceding chapter of Zosimus we are given a description of the bridge, which appears to have been an ingenious construction that could be easily dismantled in an emergency. Finally there is the explicit statement of Eusebius in his Life of Constantine (I, 38) that a bridge of boats was in fact used, and since this is not contradicted by Zosimus it seems

[2] *Il Campo Marzio dell'Antica Roma*, Rome, 1762, pp. 29–30, pl. XL.

[3] See also Ashby–Fell, p. 137. The Peutinger Table puts *ad Pontem Iulii iii*, which is probably a slip, but may record some rebuilding.

[4] Frank, *op. cit.*, p. 140; Blake, p. 44.

[5] H. Mattingly, *Coins of the Roman Empire in the British Museum*, vol. I, London, 1923, p. 75, nos. 432–6.

best to accept it. In either event, the Pons Mulvius can be assumed to have been out of commission after the battle, and must have been repaired, at least to some extent, by Constantine.

Procopius mentions two occasions on which it escaped destruction during the Gothic wars.

The Pons Mulvius was repaired on a number of occasions during the Middle Ages,[6] and was largely rebuilt between 1451 and 1458 by Popes Nicholas V and Calixtus III.[7] This involved the rebuilding in brick of the two northern main arches and the erection of a substantial tower at the north end. An extensive programme of repairs was carried out by Pope Pius VII in 1805, giving the bridge more or less its present appearance. The upper parts were badly damaged in the fighting of 1849, and were subsequently repaired. Delbrueck mentions, in addition, a general overhaul in 1871.

Description. Since the Pons Mulvius has been thoroughly surveyed and described by Delbrueck, there is little object in giving here more than a general description of the actual remains.

The Pons Mulvius crossed the Tiber with at least six arches, of which the central four have each a span of some 18 m.; the two terminal arches were of only half this span. The five piers are of approximately square plan, and average about 7·50 m. each way. The total length of the bridge between the ancient embankment walls must have been in the region of 150 m. The four main arches are all of semicircular form and spring from more or less the same level,[8] and all reached about the same height at the crown, which would have allowed a level road-way across the centre of the bridge, sloping down to ground level over the small terminal arches. In order to reduce the weight of material required, these probably sprang from a point rather higher than the springing of the main arches. The arch of Augustus mentioned by Dio may have stood over the central pier.[9]

The construction combines magnificent workmanship and the parsimonious choice of materials in a manner characteristic of the Republican bridges of Rome and its immediate neighbourhood.[10]

Piers. The piers, so far as can be seen, are of travertine, with cores probably of tufa, and are crowned with a heavy travertine impost-course, the stones of which are laid length-wise in such a way that alternate blocks at either end project some 0·50 m. to provide a firm base for the wooden centering of the arches.

The form of the cut-waters is interesting, and, thanks to Delbrueck's work, can be reconstructed with a fair degree of certainty. Up-stream, they were probably simple, triangular masses of masonry, pointed at about 70°; roughly the same, in fact, as the comparatively modern ones built on top of them.[11] The same scheme is repeated down-

[6] Tomassetti, *loc. cit.*; Delbrueck, I, p. 4; Martinori, *loc. cit.*

[7] For the probable extent of this rebuilding see Piranesi, *op. cit.*, pl. XXXIX.

[8] Delbrueck gives the variation between the highest and the lowest as 1·92 m. Some of this may be due to the subsidence of pier III.

[9] Delbrueck, II, pl. II, places an arch at either end of the bridge. Parallels can be found for both arrangements, and perhaps that with two arches is the commoner.

[10] *E.g.* Pons Fabricius, Pons Aemilius, Ponte Nomentano, Ponte Salario; see Frank, *op. cit.*, pp. 140–2; Blake, pp. 44–5. There seems to be no reason for believing that the outer facing of the Pons Fabricius was of travertine, as stated in Platner–Ashby, p. 400.

[11] Piers I, II, III and IV have possible remains of original cut-waters, but these are only visible at low water and are much obscured by weed. That of pier I seems unusually elongated and has been suppressed by a wall of travertine blocks, perhaps belonging to a later embankment.

stream. The tail of pier III is considered by Delbrueck [12] to belong to the Scauran building. It is composed of massive travertine blocks laid in alternate courses of headers and stretchers and fastened with iron clamps set in lead.

Flood-passages. The first three piers still retain substantial parts of the vaulted passages that reduce the pressure of floodwater on the spandrels. These commence two courses above the springing of the main arches, but were blocked almost to the springing of their vaults by the tops of the cut-waters and pier-tails.[13] This blocking is presumably a secondary feature and consists of considerably larger stones than those used in the actual construction of the passages.

Arches. Arch 1, at the south end of the bridge, has been so thoroughly modernised that even its span is not entirely certain. A substantial mass of masonry belonging to the south bridge-head, however, remains under the modern first arch.[14] It is peculiar in that, although the outer facing of its north side is built of alternate courses of headers and stretchers in Gabine tufa, the blocks of the core, which are of a soft yellow tufa, probably Grotta Oscura,[15] are laid entirely as stretchers, running from east to west.

The two southernmost of the large arches (nos. 2 and 3) belong for the most part to the oldest recognisable period of the bridge, though the crowns of both were extensively rebuilt in antiquity. The material is Gabine tufa, with travertine reserved for the outer ring of voussoirs on either side and for the lowest course of the vault. The whole of each arch was built originally of alternate courses of headers and stretchers, producing, when seen from the side, the effect of 'alternately divided' voussoirs. The voussoirs are of regular size and are dressed to a fairly smooth face with very slight marginal bevelling.[16] Slight anathyrosis[17] is used, and the joints are sealed with a very fine layer of lime mortar.

The rebuilding of the upper parts of these two arches was carried out entirely in travertine headers, of somewhat varying size and accurate, but strictly utilitarian, workmanship; although the vaults are carefully smoothed, the outer voussoirs were left entirely rough, with only marginal bevelling.

The third of the large arches (no. 4) shows signs of three distinct periods. The first of these is represented by eight courses of voussoirs at the south end and two courses at the north,[18] which exactly resemble those of the earlier phase of arches 2 and 3; above these, at the north, come seven courses of a later arch, which resembles the early work in choice of materials,[19] but differs from it in being built of stretchers, dressed to a fairly smooth surface, but invariably drafted at the edges. The joints are fairly accurate; no mortar appears to have been used. The travertine outer voussoirs, like those of the first period, are divided, though not strictly alternately, so as to obtain a better bond with the tufa vault without the use of unusually large stones. Finally the whole of the upper part of the arch was rebuilt in brick by Nicholas V.

[12] Delbrueck, I, p. 9. It seems to be satisfactorily bonded into the rest of the pier.

[13] At least in the case of pier III. Delbrueck, I, p. 9, figs. 8a, 8b.

[14] There is some reason for believing with Delbrueck (I, pl. II) that the bridge-head was pierced by a small arched flood-passage, similar to those used in this position in the Pons Fabricius.

[15] Frank, *op. cit.*, p. 141.

[16] This is certain in the case of the travertine, but not in that of the tufa, which is badly weathered. The lowest course of the vault at the south end of arch 2 is unusual in having a heavily bossed surface.

[17] Delbrueck, I, p. 7.

[18] Three courses in the vault.

[19] The fifth course of the later vault is entirely of travertine, the sixth partially so.

The south end of arch 5 resembles the north end of arch 4, having seven courses of voussoirs of the second period on top of two of the first period. None of the north end of the arch, above the line of projecting corbels at water level, which belong to the original pier, is earlier than the repairs of Nicholas V.

The small arch that follows (arch 6) is not preserved to any height above water and cannot be ascribed to any particular period. The same can be said of the far bridge-head, of which nothing is now visible.

The side walls. The side walls of the bridge were of travertine up to a point three courses above the springing of the flood-arches, and above this point, of well cut Gabine tufa stretchers with mortared joints. It is possible that some of the tufa work is original, though that round the crown of arch 2 is more likely to belong to the same period as the repair of the arch itself, and there is no perceptible difference between this and the lower courses. The travertine is certainly original. Above pier IV, between the springing of arches 4 and 5, there are several courses of untidy but fairly regular Gabine tufa masonry, which appear to belong to the same period as the second phase of the arches themselves, and which involve the suppression of the arched flood-passage.

Dating of the existing remains. The oldest work to be found in the Pons Mulvius is almost certainly that of 109 B.C. To this period are to be assigned the piers, the remains of the south bridge-head, the flood-passages, the earliest parts of the arches and at least the travertine courses of the side-walls. The travertine crowns of arches 2 and 3, with the upper parts of the east side-wall, are certainly ancient: the stones are well cut and are not re-used. If these parts belong, as Delbrueck suggests, to a rebuilding by Maxentius, it is surprising to find well cut tufa masonry, with finely cemented joints, at so late a date. The voussoirs, moreover, have no strong stylistic connection with those of the two late bridges of which we have remains in Rome,[20] and show greater affinities to work of the first century of the Empire. The closest parallel is perhaps the so-called 'Arco dei Pantani' in the back wall of the Forum of Augustus, the principal difference between the two being that the Arco dei Pantani has voussoirs cut to fit the courses of the wall in which it stands. The *Monumentum Ancyranum* shows that the repair to the Pons Mulvius is not of Augustan date, and there is no record of any destruction during the first century A.D. which would have rendered it necessary.[21]

The section of the bridge that stands on pier IV, comprising the north end of arch 4, above the first two voussoirs, the south end of arch 5, above the same point, and the wall that fills the spandrels on the left-hand side, contains blocks that are certainly re-used or re-cut and sometimes of rather irregular size. It is therefore likely to be of late date. Although Delbrueck omits it from his catalogue of the ancient parts of the bridge, it is almost certainly anterior to Nicholas V's repairs,[22] and has no characteristics that are specifically not ancient. It appears to have formed part of a rebuilding in which blocks from the original arches were re-used, but were re-cut with ornamental marginal drafting in order to hide any small defects in their visible surfaces. Similar drafting was used

[20] The Pons Cestius (Gratian) of 369; and the bridge of Valentinian, built in 365–6 on the site now occupied by Ponte Sisto.

[21] The defence of Rome by the Vitellians in A.D. 69 is the most obvious occasion; but from Tacitus' account (*Hist.* III, 82) it appears that the bridge was in use during the fighting, and is therefore not likely to have been seriously damaged.

[22] The slots that held the centering for the brick arches erected at this time are above, not below, the latest stone-work. See also Piranesi, *op. cit.*, pl. XXXIX.

under the late Republic and early Empire mainly for the finer types of marble and travertine work, as for instance in the tomb of Caecilia Metella on the Via Appia and in the cella walls of the round temple by the Tiber and the Temple of Mars Ultor.[23] The combination of divided travertine outer voussoirs and a simple vault occurs in the Ponte Nomentano over the Anio, which is probably late Republican, though the vault in this case is composed of headers and not, as in the Pons Mulvius, of stretchers. These parallels suggest that the section in question is at least possibly ancient, even though the technique is not good and the style is both affected and imitative. But it is impossible to date it more precisely, unless it can be connected with the probable repairs by Constantine mentioned above.

2. *Due Ponti.*

Map. 150 IV (Roma), 41°–57′–10″ N, 00°–02′–00″ E.

Km. 7·9. Ashby–Fell, pp. 138–9.

Neither of the two bridges that carry the modern road across the Fosso dell' Acqua Traversa and the Fosso della Crescenza is ancient, but Ashby quotes Volpaia's map of 1547 for the existence of an older bridge, just below the confluence of the two streams. This has entirely disappeared, unless its remains are to be recognized in the meagre traces of Roman 'quasi-reticulatum' that can be seen, together with two large tufa blocks, in the left bank of the Fosso della Crescenza just above the present point of junction of the streams. These, however, could equally well have belonged to a tomb.

3. *Bridge over the Fosso della Valchetta.*

Map. 150 IV (Roma), 41°–59′–15″ N, 00°–02′–35″ E.

Km. 11·8. G. Tomassetti, *La Campagna Romana*, III, p. 252, fig. 51; Ashby–Fell, pp. 141–2; Martinori, p. 59.

The bridge over the Valchetta, 250 m. beyond Castel Giubileo Station, appears to have had two arches of about 7 m. span each, and to have been constructed of travertine, with perhaps a concrete core. A certain amount of the original structure remains, including the outer ring of voussoirs of the left-hand side of the near arch, four voussoirs of the springing of the far arch, a few stones of the near vault and one stone at least of the left vertical wall. The original central pier has been buried in mud, and is also partly covered by a mass of rough concrete put down to reinforce it at some indeterminate period. On the right-hand side nothing remains, except what Ashby describes as 'three courses and a voussoir of the tufa blocks of the south bridge-head', which survive much decayed and overgrown, and seem to have served both as a support for the road and as a protection for the bank. The total width of the bridge does not seem to have exceeded 6·00 m.

The construction, so far as can be seen, was very similar to that of Ponte Cardaro (below, no. 14); the extrados of the arch is semi-circular, the vault is smooth and the voussoirs are drafted at the lower edge to a width of about 0·10 m., but are bevelled at the other three edges and rough in the centres.

[23] See J. B. Ward Perkins, *JRS*, XXXVIII, 1948, p. 66, fig. 10.

4. *Bridge over the Fosso di Prima Porta.*

Map. 150 IV (Roma), 41°–59′–50″ N, 00°–02′–35″ E.
Km. 13·2. L. Borsari, *Not. Scav.*, 1895, p. 106; Ashby–Fell, pl 143.

Our only evidence for this bridge is the report of Borsari that, during the building of the new bridge, 80 m. down-stream from the mediaeval one, a stretch of paving of the Via Flaminia was discovered, together with two walls of yellowish tufa blocks, which were presumed to have formed part of the ancient bridge. The blocks are described as having been 0·60 m. wide and from 0·70 to 1·75 m. long, and to have been joined without cement. The remains are no longer visible.

5. *Ponte Ritorto* (see also p. 90).

Map. 144 IV (Poggio Mirteto), 42°–17′–00″ N, 00°–00′–20″ E.
Not on the modern road. Ashby–Fell, p. 158; Martinori, p. 78.

For the first 35 km. beyond Prima Porta the Via Flaminia runs along a narrow ridge, and has for most of that distance been followed more or less closely by the modern road. As a result there are no ancient bridges to be seen along it until it reaches that marked on the map as 'Ponte Ritorto,' which crosses the Fosso di Chiavello at a point 2 km. east of the fiftieth kilometre stone of the modern road.

Ponte Ritorto, in its present state, is a rather uninspiring monument, remarkable neither for size, style nor good preservation.[24] The single arch, which has a span of 5·92 m. and a width of 5·80 m. (Ashby–Fell), has been largely rebuilt in its upper parts. The brown tufa voussoirs are 0·50 to 0·52 m. wide and show no trace of the header-and-stretcher technique. The stones of the vault are slightly drafted at the edges. The arch rests on a course of headers 0·60 m. high, the course below this being of stretchers.

Of the rest of the bridge little is ancient, except parts of the side walls in tufa *opus quadratum*, and a low wall of the same type which supports the far bank of the stream on the left-hand side; the parapet, built of ancient tufa blocks 0·55 m. high and 0·50 wide, is probably modern.

6. *Culvert near Torre Pastore* (pl. XIV, 3; see also p. 89).

Map. 144 IV (Poggio Mirteto), 42°–17′–10″ N, 00°–00′–15″ E.
Not on the modern road. Ashby–Fell, p. 158; Martinori, p. 78.

About 300 m. beyond Ponte Ritorto, hidden in a clump of trees, is a small ancient bridge across a stream which runs down from Torre Pastore into the Chiavello. The greater part of the embankment walls at the far end have been carried away by floods; but on the near side of the stream, a few courses of that on the left are still visible, and that on the right, though completely covered by a bank of débris that extends up to the level of the ancient road surface, is apparently intact. The arch is semicircular, with a span of 3·25 m., and is set back from the piers by rather more than 0·20 m. on either side. The width of the bridge is 6·10 m. Although the left outer voussoirs have fallen and those on the right are buried, the vault is in almost perfect condition. It is built, like the rest of the bridge, entirely of brown tufa blocks, laid in alternate courses of headers and stretchers and closely jointed without any sign of mortar; the courses of the vault

[24] Martinori's reference to its fine state of preservation is certainly no longer applicable.

vary from 0·32 to 0·35 m. in height, and the stretchers are up to 1·60 m. long, averaging 1·15, which is equal to the thickness of the vault and exactly double the average width of the headers; the blocks are dressed fairly smooth on their visible faces, and the edges are either drafted or bevelled to a width of 0·05 to 0·07 m. There is no evidence that the two forms of dressing are not contemporary, as they are used quite indiscriminately. The side walls also of the bridge have alternate courses of headers and stretchers, 0·50 to 0·58 m. in height, with blocks about 0·45 m. wide and three times as long, so that each course of stretchers is composed of three rows laid side by side, making a wall 1·30 m. thick. Where the outer face is preserved it is roughly dressed, with fairly wide drafting in most parts. The core, to which these walls serve as a facing, contains large pieces of travertine and little if any mortar, and is certainly not concrete in the accepted sense of the word. The date of the whole, which is of one period throughout, is probably considerably earlier than the Augustan restoration of the road in 27 B.C. (see also below, p. 89).

7. *The Treia Valley Viaduct* (pl. XIV, 4).

Map. 144 IV (Poggio Mirteto), 42°–18′–20″ N, 00°–00′–10″ E.

Not on the modern road. Ashby–Fell, pp. 158–60, sketch map, fig. 11; Martinori, pp. 78–9.

The Via Flaminia crossed the valley of the Treia at a point some 3·5 km. downstream from the modern bridge, taking a rather shorter but more difficult line. The crossing consists of five main parts: the embanked road, which edges its way obliquely down the south side of the valley, and is broken at one point by the small arched passage known as the 'Voltarella'; a bridge over the Treia itself; a long stretch of road that runs on only a low embankment across the flat bottom of the valley; a sloping ramp, faced with tufa masonry, known as the 'Muro del Peccato'; and, finally, a cutting in the rock face that forms the northern escarpment of the valley. It is, taken as a whole, an interesting study in the methods used by Roman engineers to negotiate natural obstacles of this kind. The use of a ramp, as an approach to a cliff, is unusually bold; and its gradient of about 1 in 12 is all the more surprising in that, on the south side of the valley, which presents no comparable difficulties, gradients of up to at least 1 in 8 were used.

The Voltarella, which passes under the road about 250 m. south of the river, can never have been a culvert in the strict sense of the word, since it is situated on a spur at a considerable height above the floor of the valley. It is perhaps better explained as a passage-way for cattle, on the analogy of those used in modern railway embankments. The span is about 3·10 m., and the total width between the embankment walls of the road must have been originally about 7·40 m., though at present the vault stands to a width of only about 5·30 m. The material, as in the rest of the crossing, is a yellowish-brown tufa, presumably cut from the cliff on the far side of the valley, where there are extensive signs of ancient quarrying, in addition to the road-cutting already mentioned. The arch is composed of 9 voussoirs, each 0·50 m. wide and 0·58 high, and is supported on either side by a course of headers which, like those in a similar position in Ponte Ritorto (above, no. 5), do not project to carry the centering of the arch. The interior of the vault, as in Ponte Ritorto, is built entirely of stretchers, which have slightly bevelled edges, a feature common to all the tufa bridges preserved on the Via Flaminia, but

usually more pronounced in those in which the header-and-stretcher principle is applied to the arch. There are signs of the use of wooden swallow-tail clamps.[25] Some concrete is to be seen in the filling of the embankment at this point.

The bridge over the Treia itself has disappeared, with the exception of some remains of an arch and of a concrete pier-core 60 m. north of the present river-bed; even these are unlikely to be Roman, since the mortar in the joints is extremely thick, and the concrete contains a much higher proportion of lime than that normally found in ancient bridges.

Ashby quotes some unpublished notes of Pasqui, made in the eighties of the last century, mentioning two culverts, each 1·30 m. in span, under the level stretch of road between the end of the bridge and the beginning of the Muro del Peccato. They are no longer visible.

The Muro del Peccato, which still stands in many places to its full height of some 11 m., has a total width at the top of 10·80 m. The parapets, 0·60 m. high and wide, are preserved for much of its length, as is some of the lava paving. An interesting feature of the road is a gutter, cut from blocks of tufa 0·60 m. wide, which runs along the right-hand side of the road, leaving a space of 1·25 m. between itself and the parapet for use as a foot-path.

The thick tufa walls of the ramp are built of blocks 0·55 to 0·60 m. high, 0·55 to 0·65 m. wide and up to 2·00 m. long, laid in alternate courses of headers and stretchers. As in the celebrated viaduct at Ariccia,[26] which is of somewhat less regular but better finished construction, and in Ponte Sambuco on the Via Salaria south of Rieti,[27] the courses follow the slope of the road. In some parts, at least, each course is set back a little from the one immediately below it, so as to produce a sort of stepped batter, similar to that used in the bridge over the Rio Fratta (below, no. 8). The visible faces of the blocks in the lower courses have been left rough, with edges drafted to a width of from 4 to 8 cm., but some of the upper parts of the wall were perhaps dressed to a smooth face. Mortar is used only occasionally, and then only in the lowest courses, where it is of a sandy brown colour and rather soft. The joints are quite close on the outer face, but in the interior of the wall only the horizontal faces of the blocks are cut with any precision and the vertical joints are very inaccurate. The core of the ramp, where visible, is of large irregular lumps of tufa, bound together by a mixture more like clay than mortar.

The arched passage through the Muro del Peccato, like the Voltarella, is unlikely to have served as an outlet for surplus water, except in times of exceptional flooding. It has a width of 2·60 m., with off-sets that bring the total width of the arch up to 3·40 m., and is set rather obliquely to the line of the road. The walls are built in the same way as those of the rest of the Muro del Peccato, but, being laid horizontally, make rather an awkward joint with the sloping courses of the ramp. The arch was similar in type to

[25] This is presumed from the fact that the clamp-slots that remain intact are often so placed that metal clamps could not have been extracted without damage to the stone. In Rome iron clamps were never used for joining tufa to tufa (except peperino), though they are usual from the Augustan period onwards in joints between travertine and tufa. A good example of this is to be found in the Temple of the Castores, where wooden clamps occur freely in the tufa of the podium-wall, and iron was used only to join the blocks of the wall to the travertine piers that take the weight of the columns. The same system is to be found in the Colosseum.

[26] G. Florescu, *Ephemeris Dacoromana*, III, 1925, pp. 22–7, figs. 11–4; Blake, pp. 105, 212, pls. 22, fig. 1; 52, fig. 1.

[27] E. Martinori, *Via Salaria*, Rome, 1931, pp. 81–2. The slope is somewhat steeper than would appear from Martinori's two illustrations.

that of the Torre Pastore culvert, but only a few voussoirs remain, all in a very decayed state. These have a width at the intrados of 0·40 m.

For the date of the arched passage through the Muro del Peccato, see below, p. 89.

8. *Bridge over the Rio Fratta.*

Map. 137 II (Orte), 42°–21′–30″ N, 00°–00′–00″.

Km. 12·9 from Orte. Ashby–Fell, p. 161; Martinori, p. 88.

After the ascent of the Muro del Peccato, the Flaminia returned to the Tiber Valley, and there it is followed by the modern road to Orte, from Borghetto to a point some way short of Gallese Station. Nothing now remains of the ancient bridge over the Rio Fratta except the long embankment leading up to its south end, and even this is in very poor condition except at certain points on its east side.[28] It is over 10 m. wide, but it is impossible to say whether or not this was also the width of the arch.

The material is a tufa closely resembling that of Grotta Oscura. The height of the courses varies from 0·51 to 0·57 m. (average 0·55), and the length of the individual stones from 0·51 to 0·58 m. (average 0·56) in the case of the headers, and from 1·05 to 1·75 m. in that of the stretchers. The thickness of the wall is uncertain. The dressing of the blocks is rough, with edges either drafted or bevelled to a width of 10–12 cm., and central bosses projecting in some cases up to 20 cm. The joints are good on the surface, less so in the interior of the wall. There is no sign of the use of either mortar or clamps. There is a slight stepped batter in some parts. Too little of the bridge is left to allow any but the vaguest attempt at dating. Though rather rougher in finish, it may belong to the same period as Ponte Picchiato (below, no. 9).

9. *Ponte Picchiato* (pl. XVI, 2 and 4).

Map. 137 II (Orte), 42°–22′–00″ N, 00°–00′–12″ W.

Km. 11·7 from Orte. Ashby–Fell, p. 161, pl. XI, no. 2; Martinori, p. 88.

A little more than a kilometre beyond the Rio Fratta is Ponte Picchiato, across the Rio Miccino. It is still in use. The single arch, somewhat broken on the right-hand side, and the left side wall up to two courses above the crown of the arch are generally well preserved. The arch is built askew, by about ten degrees, and has a true span of 11·45 m. (11·70 if measured along the axis of the road) and a width of 7·80 m. (originally about 8·20 m.). Like all Roman skew arches, it is not built askew in the strictest sense of the word, since the courses of the vault run horizontally. The voussoirs are arranged in alternate courses of headers and stretchers, and are 0·45 m. wide at the intrados and a little over 1·20 high. Both the outer face of the arch and the interior of the vault are fairly heavily bossed, with bevelled or drafted edges to the blocks. The length of the headers in the vault varies from 0·53 to 0·63 m. (average 0·55), while some of the stretchers exceed 2·00 m. (average 1·70). The joints are unusually good, wooden swallow-tail clamps being used, but no mortar. The foundations of the arch, which springs almost directly from water-level, project some 0·60 m. and are interrupted by vertical grooves.[29]

[28] Ashby and Fell report signs of the foundations of the far bridge-head, but these are no longer visible.

[29] Ashby–Fell, p. 161, n. 3. The suggestion that these grooves were intended for sluices seems unlikely on account of their large number; they occur only at the joints of the blocks and are probably only an unusually deep form of drafting.

The west side-wall is similar, except that in it no clamps are used; headers and stretchers are disposed in alternate courses, from 0·53 to 0·57 m. high (average 0·56); the headers average 0·54 m. in length and the stretchers about 1·50 m.

Beyond Ponte Picchiato, Ashby and Fell (p. 162) mention some concrete foundations in the Rio Maggiore (Fosso di Rustica), between Gallese Station and the Tiber. Recent changes in the course of the Tiber have obliterated all trace of them.

Dating. This bridge and that near Torre Pastore (above, no. 6) and the passage through the Muro del Peccato (pp. 86–7), together form a group distinguished by certain features in common. All are of tufa blocks, laid, even in the vault, as alternate courses of headers and stretchers, without mortar; in at least two of the three, the core is composed of rubble and earth with no sign of concrete; and all three have arches set back some distance from the tops of the piers, so as to leave a shelf on either side as a support for the centering. The most important of these features, from the point of view of dating, is the alternation of courses of headers and stretchers in the vault. Apart from the three cases in question, this is a fairly common feature in bridges of Republican or Augustan date, though it is not often found in other types of building.[30] The oldest occurrence of it that can be dated with any kind of certainty is in the Pons Mulvius of 109 B.C. (above, p. 82). The viaduct of the Via Aurelia in Rome is perhaps as old or older.[31] Other good examples are Ponte di Cecco on the Via Salaria at Ascoli Piceno,[32] and a three-arched tufa bridge under the modern Via Ostiense at km. 9·1,[33] which has travertine key-stones and a pronounced skew; see also Ponte del Diavolo on the Via Latina, north-east of San Giovanni Incarico,[34] Ponte Funicchio at Ferento,[35] the viaduct of the Via Appia at Ariccia[36] (which is probably Augustan for the most part), and perhaps Ponte Mammolo on the Via Tiburtina.[37] These examples suggest that the three bridges here in question may be ascribed to the period between the middle of the second century B.C. and the age of Augustus, a period that includes the restoration of the Flaminia in 27 B.C. There are, however, other considerations. The choice of material, a local tufa, is of little assistance, but the method of laying the blocks in the side walls is to some extent distinctive. Though it is true that the technique of *opus quadratum* continued well into the early Empire, it was then a very different style from that of the second century B.C. The best Augustan *opus quadratum*, as exemplified by the temple-

[30] The best example in buildings other than bridges is probably the gate known as the *Basto del Diavolo* at Ariccia, generally considered to be Augustan (Blake, p. 203, pl. 22, fig. 2). For an arch at Cortona, see Blake, p. 187; A. Neppi Modona, *Cortona Etrusca e Romana*, Florence, 1925, pl. IV, b (where there is no sign of the alternation of headers and stretchers in the vault that is suggested by fig. 5 of the same work). The arches in the ramps leading to the upper sanctuary at Palestrina have outer voussoirs of peperino laid in this manner, in conjunction with concrete vaults.

[31] Delbrueck (II, p. 70) dates it tentatively to 142 B.C., the date of the completion of the Pons Aemilius, with which it was connected. This seems to be borne out by the level of the buildings around it. See also Blake, p. 172, n. 126, for bibliography.

[32] Delbrueck (*loc. cit.*) puts it at the end of the second century B.C.; Riis (p. 84) and Blake (p. 216) suggest an Augustan date. See also N. Persichetti, *Röm. Mitt.*, XVIII, 1903, p. 299, fig. 5, for description, measurements, and a good photograph. The main arch was largely destroyed during the late war.

[33] Blake, p. 212, pl. 21, fig. 2.

[34] Photo Gardner. I have not seen this bridge and do not know whether it still exists.

[35] L. Rossi Danielli, *Bollettino Storico-archeologico Viterbese*, Viterbo, Feb. 15, 1908, p. 9; Blake, p. 212, pl. 13, fig. 4. It appears to be an aqueduct.

[36] See above, no. 7, n. 26. The small arch at the extreme west end is of normal construction, perhaps only on account of its small size, though it may also be earlier. For other examples, see Blake, pp. 211–2: two of these are incorrect; in the arch under Ponte di Nona the 'divided voussoirs' are due to natural cracks in the stone; and Ponte Amato has suffered from a comparatively modern rebuilding, and there is no evidence for divided voussoirs in the ancient parts of the arch. Ponte Scutonico and Ponte San Giorgio I have not seen.

[37] Personal observation, not entirely conclusive. See Nibby, II, pp. 578–9.

podia of that period,[38] relies for its stability not only on sheer weight but on extreme accuracy of fitting. This is particularly noticeable in the vertical joints of the interior of the wall. Even in the Aqua Claudia, which is a comparatively rough and utilitarian work, the quality of the internal joints, as distinct from those visible on the outer face, is decidedly good. Also, in nearly all the tufa-work of Augustan and later date, there are numerous signs of wooden clamps.[39] Here, in the Muro del Peccato and the Torre Pastore culvert, there were probably no clamps at all; and even in Ponte Picchiato, which, in addition to having a larger span, is on the whole better finished than the other two, they are confined to the arch. The absence of concrete in the cores is yet another sign that may suggest a date earlier than Augustus. Even Ponte di Pietra at Verona,[40] which is generally recognized as pre-Augustan, had a concrete core, while the viaduct at Ariccia, which is almost certainly mainly Augustan and bears a strong resemblance in general design to the Muro del Peccato, has a core that is at least partially of concrete.

The examples given above show that there is some ground for believing that the Torre Pastore bridge, the Muro del Peccato and Ponte Picchiato may be earlier than the Augustan reconstruction of the road. How much earlier, it is hard to say. One fairly close parallel to the Muro del Peccato is to be found in the walls of Falerii Novi [41] (Santa Maria di Falleri), a resemblance that lies principally in the size of the blocks, the bond, the finish of the outer facing(?) and the sporadic appearance of mortar. The courses vary in height from 0·50 to 0·60 m. (average about 0·56), and the lengths of the blocks in the facing run from about 0·44 to 0·64 m. for the headers, and from 0·80 to 1·50 m. for the stretchers. The surface has a slight stepped batter and is carefully smoothed except at the base of the wall, where the blocks are left rough, with deep marginal drafting. If the date generally accepted for these walls, shortly after the destruction of the Etruscan Falerii Veteres in 241 B.C., be correct, it is not impossible that the Muro del Peccato goes back to the original building of the Flaminia in 220 B.C. On the whole, however, the viaduct and the two bridges seem more likely to be at least a century later, and to this extent may be held to support the alternative date suggested by Säflund for the walls of Falerii.

In this same section of road there are two other arches that must be considered, Ponte Ritorto (no. 5) and the Voltarella (no. 7, above, p. 86). These may belong to the Augustan reconstruction, since their principal distinguishing characteristic is their lack of pier-cornices or other arrangements for the support of the centering. Other examples of this include Ponte Calamone (below, no. 13); the viaduct at Ariccia; Ponte Salario over the Anio[42]; the Pondel near Aosta,[43] dated to 3 B.C.; Ponte di Augusto at Rimini,[44] built in A.D. 14–20; and a bridge of the Via Ostiensis just before Acilia.[45] This list

[38] Concord, the Castores, Mars Ultor, etc.

[39] An early example of the use of wooden clamps is to be seen in the Aqua Marcia, inside Tor Fiscale. This section is believed to belong to the original building of the Marcia in 144 B.C.; T. Ashby, *The Aqueducts of Ancient Rome*, ed. I. A. Richmond, Oxford, 1935, p. 136; E. B. Van Deman, *The Building of the Roman Aqueducts*, Washington, 1934, p. 111.

[40] See below, no. 40, n. 118.

[41] Blake, p. 199, giving bibliography. G. Säflund ("Le Mura di Roma Repubblicana," *Acta Instituti Romani Regni Sueciae*, I, 1938, p. 234, and *Eranos*, XXXVIII, 1930, p. 197) proposes a date at least a century later; but the traditional date is generally accepted.

[42] Nibby, II, pp. 593–6.

[43] C. Promis, *Le Antichità di Aosta*, Turin, 1862, pp. 192–7, pl. XIV; *CIL* V, 6899; P. Barocelli, *Ricerche e Studi sui Monumenti Romani della Val d'Aosta*, Ivrea, 1934, pp. 59–62, figs. 41–2, and *Forma Italiae*, XI, i, Rome, 1948, zone II, no. 20, fig. m.

[44] Blake, pp. 215–6, pl. 23, fig. 2; *CIL* XI, 367.

[45] Km. 16·7 of the modern road.

includes the only two certainly dated Augustan bridges in Italy, two more that are probably Augustan, and two of indeterminate date.

10. *Bridge over the Tiber below Otricoli* (*Le Pile di Augusto*).

Map. 137 II (Orte), 42°–23′ to 42°–24′ N, 00°–00′ to 00°–01′ W.

Not on the modern road. Agostino Martinelli, *Stato del Ponte Felice*, Rome, 1682, pp. 91–2; H. Nissen, *Italische Landeskunde*, vol. II, Berlin, 1902, p. 408; Ashby–Fell, p. 162; Martinori, pp. 87–8; C. Pietrangeli, *Ocriculum* (*Italia Romana, Municipi e Colonie*, I, vii), Rome, Istituto di Studi Romani, 1943, pp. 107–10.

The bridge has now disappeared under the left bank of the river, and even its position is uncertain. Nothing seems to be known of its construction, except that it was built, at least in part, of travertine blocks. Nissen suggests that this may have been the Pons Minucius of the *Monumentum Ancyranum* (Latin Text, IV, 19–20); this was presumably a bridge of some importance, and was perhaps built by the Minucius Thermus who is mentioned by Cicero in a letter of 65 B.C., as being at that time *curator* of the Flaminia.[46] This identification seems as likely as any other.

11. *Ponte Sanguinaro.*

Map. 138 III (Magliano Sabino), 42°–28′–30″ N, 00°–03′–50″ E.

Eroli, p. 59; Ashby–Fell, p. 166; Martinori, p. 100.

About 7 km. beyond Otricoli, on the line of the modern road, there are remains of an ancient bridge known as 'Ponte Sanguinaro' (or 'Sanguinario'), which crosses a stream of the same name. The high abutments remain in reasonable condition, but the arch is entirely modern. The material is a yellowish-grey tufa and the construction is, so far as can be seen, rather similar to that of Ponte Picchiato (above, no. 9). The blocks are rusticated, though not to any great depth. According to Ashby and Fell, the foundations are of concrete.

12. *Ponte d'Augusto, Narni* (pl. XV).

Map. 138 IV (Terni), 42°–31′–30″ N, 00°–03′–40″ E.

Not on the modern road. P. Cluverius, *Italia Antiqua*, Leyden, 1624, vol. I, p. 636; A. Martinelli, *Descrittione di Diversi Ponti esistenti sopra li Fiumi Nera e Tevere*, Rome, 1676, pp. 3–8; Choisy, *AB*, p. 132, pls. XVI, 2; XXI; Eroli, pp. 12–47; Nissen, *op. cit.* II, pp. 406–7; Frothingham, pp. 150–2, pl. XXVIII; F. Noack, *Die Baukunst des Altertums*, Berlin, 1912, p. 99, pl. 131; Ashby–Fell, pp. 169–70, pl. XII; Martinori, pp. 111–20, figs. pp. 107, 114, 116, 117; Blake, pp. 200–1, 213–4, pl. 24.

General. Immediately below the town of Narni, half-way between the mediaeval and the modern bridge, stand the remains of the so-called 'Ponte d'Augusto,' which carried the ancient Via Flaminia across the Nera. It has a total length of some 160 m. and a height above summer water-level of more than 30 m. The second of the four arches had a span of 32 m., while the rest varied between 16 and 19·50 m. It is probable that the bridge sloped downwards towards the far end (see below, p. 94). The width is fairly constant at a little under 8·00 m. The facing is of travertine throughout. Although only the first arch is now intact, there are traces of all the other three, and the piers are

[46] *ad Att.* I, 1; see *RE* XV, 1965, *s.v.* Minucius, 60.

more or less undamaged, with the exception of the second, which fell in 1885. A detailed description of the remains seems to be necessary.

The south bridge-head. The end of the bridge nearest to Narni is constructed in what appear to be two distinct phases. The lower part, up to the springing of the first arch and for three courses above it, is of blocks laid in alternate courses of headers and stretchers, and finished on the exterior with very wide and regular bevelling. The courses vary in height from about 0·40 to 0·55 m. The upper part is of quite different appearance, having no fixed arrangement of headers and stretchers. The general tendency is towards the alternation of one course of stretchers with one composed of roughly equal numbers of headers and stretchers. The dressing of the blocks is also different from that used in the lower courses. The surface is cut fairly smooth, with only a narrow bevel at the edges of the blocks.

Pier I. The first free-standing pier is basically of similar construction to the lower parts of the bridge-head; headers and stretchers are arranged in alternate courses and have a heavily bossed surface with wide, bevelled edges. The courses vary in height between the narrow limits of 0·57 and 0·61 m. (average 0·59). The length of the stretchers varies from 1·00 to 2·00 m. (average 1·40), and that of the headers from 0·58 to 0·61 m. (average 0·59). The joints, according to Eroli, are secured by iron clamps set in lead, and are sealed with a fine layer of mortar.[47] There are signs of anathyrosis in the vertical joints. The lowest courses of the pier project somewhat to give greater stability, and are less well finished than the rest. There is no cut-water. Both up-stream and down-stream sides of the pier are ornamented with pilasters projecting only 0·10 to 0·15 m. from the main surface and not otherwise distinguishable from it; those at the near end are 1·65 m. wide and those at the far end 2·10 m., corresponding to the thicknesses of the vaults of arches 1 and 2 respectively. A similar feature is found in the bridge-head, but at a higher level, immediately below the impost-course of the first arch. Two rows of projecting headers on each of the four sides of the pier presumably supported scaffolding during the building, and were left to facilitate subsequent repairs. A row of five slots low down on the far side must have had a somewhat similar function. At a height of about 12 m. above water-level, the pier is capped by a cornice, which runs round all four sides just below the springing of arch 2. It is built up of three courses of stones, the lower two of normal height, the uppermost rather smaller. The lowest of all projects very little and is dressed in the same way as the stretchers in the rest of the pier; the second is cut to a moulding similar in section to the echinus of a flattened Doric capital, the abacus of which is provided by the third course.

Above the cornice, the construction remains the same as far as the springing of arch 1, where the style changes in the same way as in the bridge-head.

At the base of the pier, on the down-stream side, two roughly cut inscriptions are still visible. Both record distances measured from the pier and were presumably surveyor's marks of some kind.[48]

Arch 1. The first arch has 58 voussoirs, all practically identical in size and shape,

[47] Eroli (p. 24) does not state in which part of the bridge the clamps occur. It is difficult to be certain of the existence of mortar, since there is a tendency for unmortared joints to become sealed with a limy deposit from the water that percolates through the structure.

[48] *CIL* XI, ii, 4121, a–b. The condition of both, and especially of b, is poor.

and finished to a smooth face. The extrados is outlined by a plain, smooth fillet of separate slabs, which returns at the spring of the arch to make an impost-course. This was not considered strong enough to bear the weight of the centering, and at the near end of the arch six of the stones of the bottom course of the vault project for this purpose.[49] The voussoirs of the vault have an average length of 0·75 m.

Pier II. The second pier, which fell in 1885 and broke into a number of pieces, differs from the first in certain particulars.[50] It has no pilasters, and the dressing of its blocks is flatter and approximates to that of the upper parts of the side walls. The stretchers are rather irregular in length, a few being no longer than the headers. There is only one row of projecting blocks, as against two in pier 1. The cornice is the same as in pier 1, as is the row of slots low down on the near side. The construction changes in the same way as that of the bridge-head, at the eighth course above the cornice.

Arch 2. The second arch resembles the first in all respects except in size and in having no impost-moulding or corbels, since it springs directly from the pier-cornices. Only the first dozen voussoirs at the near end are now preserved in their original position. Iron dowels were probably used, though there is no sign of clamps.

Pier III. In the third pier the concrete was obviously intended to take the main pressure. It is white in colour, hard and well laid, has an aggregate of travertine chips and contains plenty of lime. The facing-blocks are a mixture of headers and stretchers laid in no particular order, in courses of 0·50 to 0·65 m. high. The general effect is rather untidy; the blocks are dressed to a fairly smooth surface, with narrow bevelling at the edges. As in pier 1, the lowest courses project somewhat, and the whole pier stands on what seems to be a solid raft of concrete. There are two rows of corbels to carry scaffolding, but no pilasters. The cornice is not preserved.

Arch 3. Of the third arch no indication remains except in photographs, but these are sufficient to show that it had the same characteristics as the first and second. Eroli (p. 27) gives its span as 17 m.

The north bridge-head. This has been sadly mutilated by the removal of almost all the facing and by the cutting through it of a passage for the Rome-Ancona railway. It resembles pier III in the character of its concrete core, though the masonry in its lower parts was mainly, to judge from the scars in the concrete, similar to that of the lower courses of the south bridge-head. The blocks were arranged in alternate courses of headers and stretchers, with an average height of 0·45 m. In the upper part a peculiar bond was used, in the form of one header to every three or four stretchers, the headers being so placed as to correspond to those in the courses immediately above and below.

Arch 4. The fourth arch, a substantial part of which is preserved on the far bridge-head, is of unusual and complicated construction, and entirely different from the other three.[51] It consists in fact of five parallel rings of voussoirs (that on the extreme left has suffered the same fate as the facing of the bridge-head), separated by spaces roughly equivalent in width to the rings themselves. Behind these, forming the extrados of the

[49] The voussoirs of this course are not tapered at all. Those of the second course have double the normal taper, though their width at the extrados is the same as that of the rest.

[50] The information given here is based partly on personal observation from a range of 25 m., but mainly on Anderson photographs 363–4, taken before the collapse. See Noack, *op. cit.*, pl. 131 and Blake, pl. 24.

[51] For a diagram, see Choisy, *AB*, pl. XVI, 2.

arch, is a solid stone vault securely bonded to the rings to make a rigid whole. The spaces between the rings were perhaps filled with concrete, but none of this survives. Below the springing, an architrave from some other building was re-used upside-down as an impost-course.

Structural history of the bridge. From even a cursory examination of the structure, it is clear that the bridge was not built all at one time. Of the two bridge-heads and three piers, no two are identical in style. Many of the differences, however, imply stages of building rather than actual reconstruction. It was only to be expected that a project of such size and boldness would have been many years under construction.[52] The lower parts of the south bridge-head, the first two piers and possibly part of the north bridge-head are probably more or less contemporary. The first three arches may also be of this period. The upper walls of the bridge, together with the pier III, are probably later, though whether they represent a rebuilding or simply the completion of an unfinished scheme is open to question.[53] The incomplete state of the far bridge-head makes its attribution to the first period doubtful; and Arch 4 is certainly of a different period from all the rest, and is probably later than any other part of the bridge.

It has been suggested that the original bridge was one of three arches, and that pier III is a later addition. This theory, whereby arch 3 would have had a span of some 43 m, is eloquently expounded by Eroli (pp. 34–6), and seems to have arisen largely from a desire to set up a record in stone arches. An arch of so enormous a span could only be fitted into the scheme by assuming that it sprang from a point below the cornice of pier II. Martinori's contention that the springing of arch 3, which was visible on pier II until its collapse, belongs to an arch of 43 m. span is little short of ridiculous in view of the small size of the voussoirs, quite apart from their height above the cornice of the pier. If the 43-metre arch ever existed, it has left no traces, and, short of assuming that the whole of the bridge beyond the first pier belongs to a reconstruction, it cannot be made to fit into the extant remains.

The difference in height between the various arches is such that, in order to avoid leaving 15 m. of blank wall above the crown of arch 4, the road-way of the bridge must have sloped down towards the far end.[54] Further evidence of this may be seen in the traces of a terrace that ran along the hill-side beyond the bridge and presumably served as its northern approach-road. This terrace stands at about the same level as the crown of arch 4. Martinori's objections to a sloping bridge are of an aesthetic nature and can hardly outweigh the obvious practical advantage of it in shortening the approach-road, which was necessarily cut in the rock for a considerable distance.

There is, fortunately, a certain amount of literary evidence for the dating of Ponte d'Augusto. The first mention of it in literature is that of Martial (VII, 93): *sed iam parce mihi, nec abutere, Narnia, Quinto; perpetuo liceat sic tibi ponte frui.* Procopius (*BG*, I, 17) is somewhat more informative. Vitiges, he tells us, did not attempt an attack on Narnia, because there were only two means of approach to it; one of these was a difficult road

[52] Compare the more ornate but less ambitious Ponte di Augusto at Rimini, which took at least six years to build (*CIL* XI, 367).

[53] Dr. Blake points out that the alternation of courses of headers and stretchers belongs properly to solid stone construction, whereas less regular masonry implies a concrete core. This is undeniable, but may not be applicable in the case of Ponte d'Augusto. Pier II, at least, has almost certainly a concrete core throughout, though both types of facing are used in it. For another violation of this principle, see Durm, fig. 211.

[54] Restored thus by Choisy (*AB*, pl. XXI).

along a precipice, the other involved crossing the bridge; 'ταύτην δὲ τὴν γέφυραν καῖσαρ Αὔγουστος ἐν τοῖς ἄνω χρόνοις ἐδείματο, θέαμα λόγου πολλοῦ ἄξιον. τῶν γὰρ κυρτωμάτων πάντων ὑψηλότατόν ἐστιν ὧν ἡμεῖς ἴσμεν.' There can be no doubt that this is the bridge in question. Another account that also confirms the claim of the *Monumentum Ancyranum* in this particular case is given in the Life of St. Juvenalis, first bishop of Narnia.[55] The story is that Augustus, having been slighted by the inhabitants of Narnia, caused their city to be destroyed, but subsequently rebuilt it, *pontemque ei mirae magnitudinis in sublimitate fundavit, et intra triginta annos explevit; et suo signavit carmine,* CAESAR AUGUSTUS DE MANUBIIS NARNIENSIS PATRONUS; *et ni fallor, nullius provinciae huic, ut dicitur, assimilatur pons.* . . . This account, indeed, is hardly historical, but it does provide evidence, at least, of an early local tradition.

The literary sources as a whole, therefore, point to an Augustan date. It has, however, been contended that this is not borne out by the actual remains; Frothingham maintained that what he described as 'the lower half, including all the piers and the spring of the arches' belonged to an earlier bridge, which he considered to be, if not contemporary with the building of the road, at least as early as the period of Sulla.[56] The pre-Augustan characteristics that he found in the piers were the absence of cut-waters and flood-arches, and the use of alternate courses of headers and stretchers. The lack of cut-waters is certainly surprising; but since this is possibly the only bridge in Italy that needed cut-waters and had none, the lack of them can hardly be taken as a sign of early date. Flood-arches one would not have expected; where they do occur, they are always above the springing of the main arches, and to have inserted them into piers of this type would have been disastrous. As to the alternate courses of headers and stretchers, these are a common enough feature in Augustan and even later buildings in Rome, though they are characteristic of tufa and peperino construction rather than of travertine.[57] In this case, however, travertine is the local material, and it was only natural that in a building of such ambitious design the piers should have been constructed of the strongest stone available, laid in a manner normally considered unnecessarily massive for a material of comparable strength.[58] For the dressing of the blocks in the earlier parts of the bridge, and especially in pier I, a close parallel is to be found in Rome, in the back wall of the Forum of Augustus. The arches have no special peculiarities, other than the ring of separate slabs that outlines them and returns, in the case of arches 1 and 3, to form an impost-course. Arches of this type are well known in town gates, such as those of Falerii Novi,[59] Perugia[60] and Spello, [61] though of these two only, the Porta di Giove at Falerii and the Porta di Santa Ventura at Spello, have the distinctive return. Porta di Santa Ventura may be Augustan; the others are almost certainly earlier. Ponte di Diocleziano near Calmazzo (below, no. 38) had a moulding of separate slabs, but is of very late date. Another bridge, Ponte di Solestà (Ponte di Porta Cappuccina) at

[55] *AA. SS. Maii*, vol. 1, p. 388 (May 3rd.).

[56] The original bridge was destroyed by the Romans during the Second Punic War (Zonaras, VIII, 25).

[57] Among others, the Forum of Augustus, the podia of the temples of the Castores, of Mars Ultor and of Concord, and the Aqua Claudia.

[58] Examples of *opus quadratum* in travertine exist in the town walls of Anagni and Paestum (personal observation) and of Lucca (Blake, pp. 107–8). All these are probably rather too early to have much bearing on the case in point.

[59] See p. 90, n. 41.

[60] F. Noack, *Röm. Mitt.*, XII, 1897, pp. 174–82, figs. vi–xi, pls. VIII–IX; I. A. Richmond, *JRS*, XXIII, 1933, pp. 161–3; Riis, pp. 65–98; Blake, pp. 199–201.

[61] Frothingham, p. 192, pl. XXXIII; I. A. Richmond, *PBSR*, XII, 1932, pp. 56–62, figs. 8–11; Blake, p. 200, pl. 17, fig. 2.

Ascoli Piceno,[62] is a doubtful case. Mediaeval door-arches with this type of moulding are common, and several are to be seen in Narni itself.

The dating of pier III and of the upper parts of the bridge is less certain. There is no particular reason why they should not be Augustan also, except for the improbability of two very different styles of masonry being used at one time in different parts of the same bridge.[63] Similar masonry in Ponte Calamone (below, no. 13) is probably Augustan.

The fourth arch is certainly late, if only because of the use of second-hand materials in its impost-course. A bridge of similar construction north of Foligno is mentioned by Martinori.[64] It differs in principle from the juxtaposed rings of voussoirs that form the arches of several bridges in Gaul,[65] and also from the five parallel rings separated by concrete filling that are used in the upper parts of Ponte San Martino between Ivrea and Aosta, but are not connected by a solid stone vault.[66] The destruction that rendered necessary the rebuilding of this arch was perhaps due to military rather than to natural causes, as this was far from being the weakest part of the bridge. By its mere position, it was liable to be destroyed in any war that involved an attack on Rome from the north-east.

Subsequent damage to the bridge about 800, and again, after a restoration, in 1053 or 1054, is recorded by Eroli, on the evidence of manuscripts. By 1676, as Martinelli's plate shows, only the first arch was still standing. The collapse of pier II in 1885 left the bridge in more or less its present state.

For nearly two thousand years Narni has been proud of its bridge, though perhaps unaware of the achievement that it represents. The masonry, though often very fine, is of extremely variable quality, and is nowhere better than the best work of the same type in Rome itself. The span of the largest arch is not in itself a record. Two other bridges, Ponte San Martino (see above) and the bridge over the Bölau Su in Commagene,[67] exceed it by a small margin. Both, however, are single arches springing from the rock on both sides, whereas the great arch of Ponte d'Augusto begins 12 m. above water-level on free-standing piers. Procopius was right in praising its height, for this in fact is its outstanding feature. The only comparable example is Trajan's six-arch bridge at

[62] This has been quoted as a parallel (Blake, p. 201). It is difficult to be certain whether or not the moulding is separate from the voussoirs. The single arch and both piers are original. The piers are decorated with pilasters 0·60 m. wide, which return under the arch and support a moulded cornice similar to that of Ponte d'Augusto. The arch-moulding is of the same form as the cornice. The facing is of smooth-dressed limestone blocks of irregular length. See also Blake, p. 216, pl. 23, fig. 3.

[63] It is possible that the bridge was damaged by the Vitellians in their half-hearted attempt to hold Narnia against the advancing Flavian army in A.D. 69 (Tac. *Hist.*, III, 58 ff.). It is perhaps hardly likely that such damage would have been sufficient to warrant the rebuilding of a whole pier and much of the upper walls.

[64] See below, under Ponte Centesimo, no. 19.

[65] For bridges at Sommières and Vermonton, see Choisy, *HA*, p. 584. For Pont d'Ambroix, see below, p. 99, n. 73. For the Pont du Gard, Choisy, *AB*, p. 128, fig. 79; Durm, figs. 271, 335; E. Espérandieu, *Le Pont du Gard*, Paris, 1926, pp. 42, 61. A closer parallel to Ponte d'Augusto is probably El Kantara in Algeria, between Biskra and Constantine, which has three parallel but not juxtaposed rings, connected by a solid stone extrados, but without an overall bonding system: diagram, Choisy, *HA*, p. 571; description and photograph, S. Gsell, *Monuments Antiques de l'Algérie*, Vol. II, Paris, 1901, p. 7, pl. LXXIII.

[66] C. Promis, *Le Antichità di Aosta*, Turin, 1862, pp. 92–5, pl. II; P. Baroccelli, *Ricerche e Studi sui Monumenti Romani della Val d'Aosta*, Ivrea, 1934, pp. 38–9, figs, 12–16. This is an interesting bridge, the lower parts of which are probably of early Imperial date. The upper parts of the arch are unusual in that the voussoirs are joined by external iron clamps.

[67] G. Jacopi, *Bollettino d'Arte*, Anno XXX, Ser. III, 1936, pp. 166–9. The span is 34·20 m. For a rather similar bridge over the Gök Su, with a span of over 30 m., see F. K. Dörner and R. Naumann, *Forschungen in Kommagene* (*Istambuler Forschungen*, vol. 10), Berlin, 1939, pp. 61–6, pls. 7, 21, 22.

Alcántara in Spain,[68] which has two central arches each of over 26 m., springing from piers 20 m. high. This, however, is a work of A.D. 105–6 and is considerably in advance of Ponte d'Augusto in the elaborate buttressing that ensures its stability.

13. *Ponte Calamone.*

Map. 138 IV (Terni), 42°–32′–50″ N, 00°–04′–30″ E.

Km. 10·9 of the modern Via Tiberina. Eroli, pp. 57–8; Ashby–Fell, pp. 171–2, pls. XIII; XIV, 1–2; Anderson–Spiers–Ashby, pl. LXIX; Martinori, pp. 146–7, photo. p. 145.

Two kilometres beyond the turning to Narni Station, on the modern road to San Gemini, the ancient Via Flaminia crossed the Fosso Calamone by means of a small but very fine two-arched bridge. Until the war, this was extremely well preserved, only the parapets and parts of the embankment walls having been destroyed. Now, however, only the far arch, the central pier and the greater part of the embankments are left; the rest, including almost all the near arch, the small flood-arch over the central pier, and substantial parts of the walls, were replaced in brick in 1944. Many of the stones from the destroyed parts are still lying in the stream, though it is hard to say whether enough remains to make a reconstruction of the original worth while.

The plan, with long embankments, two arches and a heavy central pier, presents no unusual features, except a small arch inserted over the pier to carry off flood-water. This is a refinement not normally found in Roman bridges of such small size. The practice seems to have originated in Rome as a means of saving material, at a time when concrete was not considered strong enough for use in bridge-cores (see below, p. 99).

The pier itself has the remains of a cut-water up-stream, but was not provided with a corresponding tail down-stream. It is somewhat unusual in not having a projecting course below the springing of the arches. The courses are generally from 0·58 to 0·60 m. high, and the blocks vary in length from 0·60 to over 2·50 m.

Both the main arches and the flood-arch were semicircular on both extrados and intrados, except for some projection into the wall by the voussoirs in the lower parts of the arches. The voussoirs themselves are rough-faced, with wide drafting on the lower edge and bevelled edges elsewhere.

The stones of the vault are often over 1·00 m. long and are roughly dressed with bevelled edges, a feature specially characteristic of the Via Flaminia, occurring in more than half of the bridges in which the vaults are preserved.

The embankments are of rather more regular masonry than the rest of the bridge and very much more regular than those of Ponte Cardaro (below, no. 14). The courses vary in height from 0·52 to 0·62 m. (average, 0·57 m.), and the individual blocks are from 0·80 to 1·60 m. long (average, 1·25 m.). There appear to be no headers used at all. The dressing is not unduly rough, and the edges are bevelled, though not to any great depth; the joints, as elsewhere in this bridge, are accurate, if not quite up to the standard customary in Rome itself. There is no sign of the use of iron clamps or dowels.

[68] See below, under Ponte di Traiano, no. 36. There seems to be considerable disagreement as to the exact measurements. It was almost entirely rebuilt in 1859–60, but without serious changes. An interesting feature is the ring of small stones round the extrados, which suggests faintly the ring of slabs used in Ponte d'Augusto.

14. *Ponte Cardaro* (pl. XVI, 1 and 3).

Map. 138 IV (Terni), 42°–34′–15″ N, 00°–05′–05″ E.

Km. 12·5 of the modern Via Tiberina. Eroli, pp. 57–8; Ashby–Fell, p. 172, pls. XI, 3; XIV, 2–3; Martinori, pp. 146–7.

Two-and-a-half kilometres beyond Ponte Calamone lies Ponte Cardaro. Until recently it was in a state of almost perfect preservation up to the crowns of the arches. During the war, however, almost all the central arch, together with much of the upper parts of the walls, was destroyed, and has been replaced in brick. The bridge has five arches, increasing in size towards the centre, and a long embankment at either end. The material is a rough travertine, which shows little sign of decay from natural causes.

The heavy piers are crowned by string-courses, which would have been well able to support any centering used, and they are furnished with rather blunt cut-waters at their up-stream ends. As in Ponte Calamone, there is no trace of pier-tails.

The arches, which are all semicircular, resemble those of Ponte Calamone in having roughly dressed voussoirs, drafted to a considerable width at the intrados and bevelled at the other edges. The neatness and regularity of the drafting of the intrados suggests that it was carried out after the voussoirs had been put in position. The extrados of the arches is in some cases cut to conform to the courses of the vertical wall. The key-stones, though they project outwards from the face of the arches and are finished to a smooth surface, are not otherwise distinguished from the rest of the voussoirs.

The vaults are of carefully smoothed blocks averaging 0·80 m. in length, in contrast to the longer, rougher stones used in this position in Ponte Calamone.

The vertical wall between and above the arches is composed of large blocks in fairly regular courses, mainly stretchers, but with some headers at irregular intervals to bind the facing to the core, which is presumably of concrete. In the right-hand embankment wall of the south bridge-head, however, the courses become much less regular and, although the accuracy of the joints is maintained, a single block sometimes occupies the whole height of two courses. This wall is supported by two square buttresses, which are bonded into it and appear to have run up at least to the level of the road.

The parapets and the string-course on which they rested have completely disappeared, and are not shown even in Vespignani's drawings of 1831 (Ashby–Fell, pl. XIV, 2–3).

Dating. At first sight, there is a great similarity between Ponte Calamone and Ponte Cardaro, but in fact many of the resemblances between them are superficial. The main points of resemblance are the dressing of the masonry, the wide drafting of the intrados and the slight irregularity of the extrados. None of these features is of much chronological significance, though the first and second can normally be taken to indicate a date not earlier than the middle of the first century B.C.[69] Slight irregularity of the

[69] The use in Rome of roughly dressed travertine with well defined marginal bevel or draft seems to begin with the podium of the Temple of Saturn, probably built by L. Munatius Plancus in 42 B.C. (Platner–Ashby, p. 464; Blake, p. 156). Previously travertine was normally dressed to a smooth face whenever it was intended to be seen. Wide drafting of the intrados of arches appears frequently in conjunction with rough-dressed masonry. Early examples in Rome include the door-arch of the building behind the Temple of Romulus, now generally attributed to the Augustan Temple of the Penates (Platner–Ashby, p. 389; G. Lugli, *Roma Antica, il Centro Monumentale*, Rome, 1946, p. 226), and the back wall of the Forum of Augustus, where it is used in the Gabine tufa arches, but not in the travertine Arco dei Pantani. Under Claudius and the Flavians it becomes quite a feature of Roman travertine construction, being used in the arch of Aqua Virgo in Via del Nazareno (A.D. 46), in Porta Maggiore

extrados is found at almost all periods, even in highly finished buildings.[70] The differences between the two, however, are considerable. Ponte Calamone is distinguished especially by the slightly flatter dressing of its masonry, the lack of any kind of projecting pier-cornice or corbels that might have supported centering, and the presence of a flood-passage. The first of these features is probably of little importance; the second, as has already been suggested (p. 90), is generally an Augustan characteristic; the third is of greater interest. The earliest dated appearance of flood-passages is probably in the Pons Mulvius of 109 B.C. (above, no. 1, p. 82). This was followed in 62 B.C. by the Pons Fabricius,[71] and under Augustus by the restored Pons Aemilius.[72] Elsewhere in Italy examples are rare: apart from Ponte Calamone, Ponte di Pietra at Verona may be the only one. Under Augustus the centre of emphasis on this feature shifts to the provinces. In Gaul and Spain there are numerous early Imperial specimens; [73] in many places there is a tendency to reduce the size of the passage or convert it into a small flat-roofed tunnel. The exact purpose of these passages seems to vary somewhat. They had the obvious advantage of saving material. In the early stages they served to decrease the pressure of water on the spandrels and at the same time permitted the use of wide, and therefore stable, piers, a considerable advantage in rivers that were liable to flooding and had soft, muddy beds. In some early bridges north of Rome, a different system was evolved. This involved the use of long, narrow piers, which offered little resistance to the water either above or below the springing of the arches, but had the obvious disadvantage of instability unless very well sunk into the river-bed.[74] It is very unlikely that either of these solutions was used in Italy after the time of Augustus, and it is probably to the reconstruction of the Flaminia in 27 B.C. that Ponte Calamone is to be assigned.

The closest parallel in Italy to Ponte Cardaro was, without doubt, Ponte Apollosa on the Via Appia, a few kilometres south of Benevento.[75] This had one main arch of about 9 m. span with a smaller arch of about 3 m. at either end. The two piers were low, and were capped with heavy string-courses. The arches were all semicircular, with some irregularity in the extrados, and slight additional emphasis on the key-

(A.D. 52) and in the inner arcading of the Colosseum. Bridges in which it occurs include two near Santa Marinella on the Via Aurelia (Blake, p. 210, pl. 20, figs. 2–3); Ponte Manlio (below, no. 33), the bridge over the Valchetta (above, no. 3) and Ponte Toro (below, no. 39) on the Flaminia; and several examples on the Appia.

[70] One of the earlier examples is in the so-called Tempio di San Manno near Perugia (Durm, fig. 52; Riis, p. 82; Blake, p. 197). Compare the Severan bridge over the Bölau Su (above, no. 12, n. 67).

[71] Blake, p. 146.

[72] It seems to be generally agreed that the one remaining ancient pier of the Ponte Rotto belongs to an Augustan reconstruction (Delbrueck, I, p. 22; II, pl. II; Platner–Ashby, p. 398; Blake, p. 178). This is not to say that the original Pons Aemilius of 142 B.C. did not also have flood-arches.

[73] In Gaul, examples include Pont d'Ambroix and the bridges at Boisseron and St. Thibéry; see A. Grenier, *Manuel d'Archéologie Gallo-Romaine* (J. Déchelette, *Manuel d'Archéologie*, Vol. VI), part II, i, Paris, 1934, pp. 190–4, figs. 61–2. For Spain, see E. Hübner, *Bullettino dell' Instituto di Corrispondenza Archeologica*, 1862, p. 170 (Bridge at Mérida); M. Almagro, *Ampurias*, II, 1940 pp. 176–7, pl. II (Bridge at Luco); B. Taracena in *Ars Hispaniae*, Vol. II, Madrid, 1947, p. 15, fig. 2 (Luco); p. 17, fig. 5 (Mérida); J. A. Ferreira de Almeida, *Fasti Archaeologici*, III, 1948, no. 263, figs. 14–15 (Bridge at Vila Formosa).

[74] See below, no. 40. In Ponte di Pietra at Verona very narrow piers were used in conjunction with high, narrow flood-passages.

[75] A. Meomartini, *I Monumenti e le Opere d'Arte della Città di Benevento*, Benevento, 1889, pp. 267–8, pl. XXXVII; Blake, p. 211. It is just possible that the inscription, *CIL* IX, 2122, of A.D. 198, recording the complete rebuilding of a bridge by Severus and Caracalla, belongs to Ponte Apollosa, though its provenance is not certain. The bridge itself was badly damaged during the war, and has since been rebuilt, not from the original blocks. Part of one of the embankment walls was uncovered on that occasion, and is in a fair state of preservation, as are the piers and some of the walls supporting the river-banks. Montecchini's measurements and Mr. Gardner's photographs, however, are the principal evidence on which a description of it can be based.

stones, which either projected or were rather higher than the rest of the voussoirs. The intrados was heavily drafted, while the rest of the stone-work was either drafted or bevelled. The quality of the finish, and especially of the joints, is rather higher than in Ponte Cardaro. The abutments, which survived destruction during the war, are of slightly irregular limestone reticulate, with buttresses, the corners of which are turned with small limestone blocks. Retaining walls of reticulate support the river banks. Ponte Lebbroso, immediately to the south of Benevento, contains some rather similar work, in at least two periods. Ponte Corvo, between the two, was of the same general type, and Ponte Tufaro, to the south of Ponte Apollosa,[76] although of almost polygonal masonry, was probably more or less contemporary. It is extremely unlikely that any of these bridges goes back far into the period of the Republic: Ponte Tufaro, though it appears at first sight, owing to its irregular construction, to be earlier than the rest,[77] contains not only a number of iron dowels, but also a concrete core, and can hardly be much earlier than Augustus. The reticulate of Ponte Apollosa could well be Augustan,[78] and while it is not possible to establish definitely its relation to the rest of the bridge, there is no indication that it is not original. On both the Appia and the Flaminia there is a marked lack of Augustan inscriptions recording any kind of repairs,[79] and it is not until the time of Trajan that these become even comparatively common. Two Trajanic inscriptions from near Terracina may give some indication of the type of work that was being done on the Appia in the early years of the second century. One is perhaps to be associated with Ponte Alto, below the Punta di Leano,[80] which is remarkable for its irregular limestone masonry; the other, from near Monte San Biagio, can possibly be referred to a bridge of rather large and regular, but not very well cut blocks, which has now been completely destroyed.[81] Since neither of these two bears much resemblance to Ponte Cardaro, it is probable, though by no means certain, that Ponte Cardaro does not belong to the restoration of the Flaminia that took place under Trajan and Hadrian. Since it is also unlikely to be pre-Augustan, the conclusion to be drawn, for want of a better, is that it is Augustan, or failing that, belongs to the first century A.D.

15. *Bridge at San Giovanni de'Butris* (pl. XVII, 1).

Map. 131 III (Massa Martana), 42°–40′–45″ N, 00°–05′–55″ E.

Km. 28·8 of the modern Via Tiberina. Nissen, *op. cit.*, II, p. 397; Ashby–Fell, p. 174; Martinori, p. 158; Becatti, Zone V, no. 38, fig. 19.

One kilometre before Acquasparta, a fine travertine bridge belonging to the Flaminia now does duty as a foundation for the mediaeval chapel of San Giovanni de'Butris. The stream that it crossed has changed its course and the modern road passes a little to the left of it.

[76] Ponte Lebbroso, Meomartini, *op. cit.*, pp. 274–85, pls. XXXIX–XLI; Ponte Corvo, *ibid.*, p. 270, pl. XXXVIII; Ponte Tufaro, *ibid.*, pp. 264–7, pl. XXXVI; Blake, p. 211. All three were badly damaged during the war: Ponte Tufaro has not been rebuilt.

[77] The presence, low down in the left-hand wall of the far bridge-head, of some masonry remarkably like that of Ponte Apollosa is perhaps a hint that the irregular masonry belongs to a later rebuilding. This point should not be pressed. The dowels appear in the arches, and it seems that clamps were not used in the walls.

[78] Blake, pp. 274–5 *et al.* The *tesserae* are about 0·08 m. square on the surface and up to 0·20 m. deep.

[79] Three Augustan mile-stones on the Appia, *CIL* IX, 5986, 5988 and 5989, give no particulars of the work done.

[80] *CIL* X, 6846. See below, under no. 15. The inscription does not mention any specific repair, but is said to have come from an ancient bridge near Ponte Maggiore. To judge from old photographs, there were quite a number of these in the vicinity of Ponte Maggiore.

[81] *CIL* X, 6853. The bridge is recorded in one of Mr. Gardner's photographs.

Two arches of uncertain span, each askew by some 15°, together with the side walls between them and to the south, are well preserved but practically buried. The voussoirs of both arches average 0·75 m. in height and 0·60 m. in width, and are roughly dressed, with occasional bevelling at the edges. The vaults are smooth and have a width of 8·70 m. after allowance has been made for the skew.

The vertical walls are built of short stretchers, in rather wavy courses from 0·35 to 0·55 m. in height, roughly dressed and, in the lower parts, bevelled at the edges. The uppermost two courses on the left-hand side are badly laid and wedged, where necessary, with small stones. These appear to have been reconstructed from the original stones at the time of the building of the chapel.

The bridge as a whole resembles others on the Flaminia less than it does some of those on the Via Appia, especially Ponte Alto near Terracina[82] and Ponte Tufaro between Montesarchio and Benevento,[83] which have somewhat similar, irregular coursing. Irregularity in Roman bridge construction is not necessarily a sign of early date[84]; both the examples on the Appia quoted above are of fine construction, and contain a great deal of iron in the form of dowels or bar clamps, and are therefore not likely to be pre-Augustan. In the bridge at San Giovanni no clamps or dowels of any material are visible. This may be due entirely to its generally good state of preservation.

16. *Bridge in Valle Petrosa.*

Map. 131, III (Massa Martana), 42°–41′–55″ N, 00°–05′–40″ E.

Not on the modern road. Becatti, Zone V, no. 35, fig. 16.

At a point some 700 m. beyond the turning to Acquasparta, the modern road turns slightly to the right of the ancient line, which continues a straight course in the direction of Ponte Fonnaia. After about 500 m. of what is now hardly even a cart track, it crossed a small bridge in the Valle Petrosa.

Little of this bridge remains in good condition, except about 5 m. of the right-hand side wall on the near bank of the stream; this is constructed of polygonal travertine blocks, finished to a smooth surface. Although some of the blocks are of fair size (one is 1·10 m. long and 0·90 high) the wall has not the solidity of the best polygonal work, since the accurate jointing of the outer face is not continued for any great depth into the interior. The core is of earth, gravel, and stones. The arch has entirely disappeared,[85] together with most of the roughly squared masonry that supported it. The rest of the side walls are almost completely ruined. The span of the arch is dubious, and the total width may not have exceeded 4 m.

Owing to the lack of similar work in the district, it is impossible to give any idea of its date.[86]

[82] G. Lugli, *Forma Italiae*, I, i, part 2, Rome, 1928, Zone II, no. 36, fig. 12; Blake, p. 211; see also p. 100, n. 80.

[83] See also p. 100, n. 76.

[84] Ponte della Catena, near Cori, which is in parts of almost polygonal construction, is generally considered to be early, but has other unusual features such as a multi-annular arch. See A. Accrocca, *Cori, Storia e Monumenti*, Rome, 1933, pp. 95–6, fig. 22; Blake, p. 211, with bibliography.

[85] Possibly the upper parts of this bridge and of that over the Titerno below Faicchio (A. Maiuri, *Not. Scav.*, 1929, pp. 211–3, fig. 2; Blake, p. 193) were always of wood. Here there are no signs either of a stone arch or of slots for beams.

[86] The polygonal masonry of the walls of Cesi (Ashby–Fell, pp. 172–3, fig. 12; Blake, p. 103) is of a very different type.

17. *Ponte Fonnaia* (pl. XVII, 2).

Map. 131 III (Massa Martana), 42°–43′–15″ N, 00°–05′–25″ E.
Not on the modern road. Ashby–Fell, pp. 174–5; Martinori, pp. 160–1; Becatti, Zone V, no. 31, figs. 15, 17–8.

About 500 m. south-west of the point where the modern Via Tiberina crosses the Torrente Naia is an ancient bridge over a tributary of the same river.

It is an impressive structure some 8 m. high, with a single narrow, tunnel-like arch set at an angle of less than 60° to the axis of the road. It is difficult to see why so massive a bridge should have been required at this point; the stream that it crosses is normally insignificant, and often quite dry. The bridge has a width of about 15 m., approximately double that of Ponte d'Augusto and considerably greater than that of any other bridge on the Flaminia, with the exception of Ponte del Diavolo (below, no. 18). There is reason to believe that, even in quite an early stage of its development, the road had a total width of from 10 to 11 m.;[87] but it was usual for bridges of any size to be considerably narrower than this.

The arch, apart from being built on the skew, is of straightforward construction, with a generally semicircular extrados, though the bottom voussoirs project in some cases beyond the main curve and are bonded into the vertical wall. Each voussoir is provided with a projecting lug at its upper end, which fits into a slot on the next below it.[88] Iron clamps do not seem to have been used.

In the dressing of the stones, and also in the bonding system employed, the masonry of Ponte Fonnaia bears some resemblance to that of the upper parts of Ponte d'Augusto (above, no. 12); the material is similar to, but rather smoother than, the Narni travertine, and the blocks are similarly dressed, with narrow bevelled edges; the headers are rather more numerous in proportion to the stretchers, and the courses are considerably higher (0·55 to 0·90 m. as against 0·45 to 0·50 m.). There is no sign of the use of clamps in the walls. The walls are reinforced at the back with about 1 m. of concrete of rather poor quality, which can never have contributed much to the strength of the bridge. The rest of the core is of earth and rubble. A number of headers in the lower courses of the abutments bear the mason's marks II and PII or PFI, the letters being well cut and from 10 to 12 cm. high.[89]

According to Martinori (p. 161, n. 1) an inscription reading OVINIO . . . IR . . . CURATORI VIAE FLAM . . . PAL . . . was found near Ponte Fonnaia in 1709.[90] There is no evidence that it belonged to the bridge.

A little beyond Ponte Fonnaia, there are remains of a small culvert with a span of 1·40 m., on a slightly different axis from that of the bridge, to which it appears to have been related. The arch, if it had one, has fallen, and only four courses of the interior masonry are visible. The paving of the bed of the stream, where it runs through the culvert, is an interesting original feature.[91]

[87] This is the width of the embankment at the crossing of the Treia (above, no. 7, p. 87) and is that normally found in small culverts.

[88] Compare the somewhat similar device used in the arches of the Colosseum (Choisy, *AB*, fig. 78; Durm, fig. 248).

[89] Ponte Corvo on the Appia south of Benevento has the somewhat similar marks P and IIII.

[90] L. Ovinius Rusticus Cornelianus, curator viae flaminiae probably in the early third century, *RE*, XVIII, 2, 1995.

[91] For other examples, see below, no. 20.

18. *Ponte del Diavolo.*

Map. 131 IV (Bevagna), 42°–52′–35″ N, 00°–06′–40″ E.

No kilometre stones. Ashby–Fell, p. 176; Martinori, p. 166, n. 2; Becatti, Zone IV, no. 4, figs. 3–4.

About one kilometre beyond the Osteria del Bastardo, the modern road passes 100 m. to the right of an ancient, grey limestone culvert, known locally as 'Ponte del Diavolo.' Although damaged at one end, it still has the unusual width of 14·70 m.; the piers are 2·90 m. apart and support an arch of 3·30 m. span.[92] The vault is of two periods: the right-hand end is an addition and has only six courses of voussoirs instead of nine. The span and height are roughly constant throughout. The interior is only roughly finished, and all the blocks, including the voussoirs of the vault, are bevelled at the edges. The stones of the later part of the vault are provided with sinkings, wider at the bottom than at the top, for the insertion of lifting apparatus.[93]

A roughly cut inscription on a block inside the culvert is given by Becatti as M.V.S.N.C.; my own reading, rather hurriedly made, was . . .]V.S. IUC[. . . There seems no particular reason for doubting its antiquity.

19. *Ponte Centesimo.*

Map. 123 II (Nocera Umbra), 43°–01′–30″ N, 00°–18′–00″ E.

Not on the modern road. Ashby–Fell, p. 179; Martinori, p. 170.

Ponte Centesimo is not ancient, but contains a large number of blocks that appear to be of ancient origin. Only the south abutment of the bridge survives.

Martinori (pp. 115, 170) mentions a bridge over the Fosso dell' Arma (?), about km. 165, which was constructed in the same way as the fourth arch of Ponte d'Augusto (see above, no. 12, p. 93). I have not been able to find it.

20. *Small bridge south of Nocera Umbra.*

Map. 123 II (Nocera Umbra), 43°–06′–00″ N, 00°–19′–15″ E.

Km. 171·8.

2·7 kilometres south of Nocera are the remains of a small arched bridge, with a span of 2·35 m. On the left-hand side, the vault and the far side wall are complete, together with a small stub of wall that supports the near bank of the stream; on the right, nothing is preserved at all. The present width of the ancient part of the vault is only 5·80 m.

The walls are of rough travertine blocks, in courses varying from 0·52 to 0·90 m. in height, fairly smooth, and bevelled at the edges. Contrary to the usual custom, the outer voussoirs are smooth, while those of the vault are bevelled. The extrados is semi-circular, and is broken only by the bottom voussoir at the far end, which projects 0·10 m. into the vertical wall.

The only interesting feature in this bridge is the paving of large blocks that forms the bottom of the stream and prevents the foundations from being washed away. As in the culvert near Ponte Fonnaia (p. 102), this is original; it is a rare feature, which one would expect to find more frequently.[94]

[92] For parallels, see p. 89.

[93] Compare J. Durm, *Die Baukunst der Griechen*, Leipzig, 1910, figs. 70; 71, iii.

[94] There was another example of it under the now destroyed bridge over the Fosso dell'Acqua Traversa, on the Appia near Fondi. (Photo. Gardner.)

21. *Small culvert two kilometres north of Nocera Umbra.*

Map. 123 II (Nocera Umbra), 43°–07′–50″ N, 00°–20′–20″ E.
Km. 176·5.

Two kilometres north of Nocera, at the point where the road to Poggio leaves the modern Flaminia, is a small ancient culvert, largely hidden under its modern successor, but still preserved up to a width of 6·50 m.

The passage is made up of two rows of upright stone slabs, about 0·90 m. apart at the top but sloping outwards towards the bottom. These are capped by a row of similar slabs, some 0·60 m. thick, laid horizontally and cut away at the extremities in order to fit the tops of the uprights.

The whole is built of a coarse, yellowish conglomerate, roughly dressed, and could have been constructed at any period at which time, money or skilled labour was in short supply. It does, however, show that the modern road here follows the ancient line.

22. *Culvert six kilometres north of Nocera Umbra.*

Map. 123 I (Gualdo Tadino), 43°–10′–10″ N, 00°–20′–10″ E.
Km. 181·2. Ashby–Fell, p. 179.

Six kilometres north of Nocera, and 500 m. south of the Fosso di Boschetto, is a large culvert in almost perfect preservation, which still extends to a width of 11 m. and carries the modern road. It has a span of 1·10 m. and a height of over 2·50 m., and is built of blocks of coarse, grey conglomerate, which vary in length from less than 0·50 to more than 2·00 m., and in height from 0·43 to 0·72 m. These are roughly dressed on their visible faces, with deep marginal drafting. The joints are as accurate as the stone would permit; no mortar is used.

In place of an arch, the top is covered over with slabs of the same stone, 0·60 m. thick and up to 2 m. long.[95]

Such parts as are preserved of the accompanying embankment walls are much overgrown with ivy, but appear to be in a fair state.

The whole culvert is obviously of only one period, and compares favourably in construction with the somewhat similar culverts beyond Ponte dei Ciclopi (below, no. 31).

23. *Ponte Spiano* (pl. XVII, fig. 4).

Map. 116 II (Fabriano), 43°–20′–15″ N, 00°–16′–45″ E.
Km. 202·5 (204·6 on map); Ashby–Fell, p. 181; Martinori, p. 175; E. Stefani, *Not. Scav.*, 1935, pp. 165–6, fig. 16; Blake, p. 215.

Ponte Spiano crosses the Rio Fonturce, a few metres to the left of the modern road. For some reason it has been much neglected by those who have in the past studied this sector of the Flaminia. Ashby and Fell mention only 'traces of Roman work in the modern bridge', while Martinori, though he gives its position, does not include a description of it.

In plan it appears to have been perfectly normal, with a span of 3·25 m. and a total width of 10·60 m., now reduced to only 7·50 at the arch. It is built of a Lias limestone,

[95] For similar culverts on the Via Salaria, see N. Persichetti, *Viaggio Archeologico sulla Via Salaria*, Rome, 1893, p. 67, and *Not. Scav.*, 1896, pp. 536–7.

known locally as 'pietra corgnola', in courses varying from 0·30 to 0·85 m. in height. The blocks are up to a metre in length, and are laid according to no fixed system. The surfaces, except in the vault, are dressed to a rough face, with occasional attempts at drafting, and considering the difficulty of the material, the joints are good.

The vertical walls present irregularities not only in the height of the courses but also in the occasional enlargement of one course at the expense of the next, a feature found also in Ponte Fonnaia (no. 17), and in the bridges of the Benevento group on the Appia.[96] The enlargement in this case takes the form of a step, and not of an irregular wave, such as occurs in the bridge at San Giovanni de' Butris (no. 15). It should further be distinguished from the irregular jointing characteristic of bridges built wholly or partly of second-hand materials, such as the Pons Cestius or the fourth pier of the Pons Mulvius (no. 1).

The single arch of 13 voussoirs is supported on a massive pier-cornice, and is peculiar in that its lower voussoirs are cut to a pentagonal form to fit the courses of the vertical wall. This type of arch, in its perfect form, is not common in ancient bridge-construction. Examples in Italy include the Pons Aelius, Ponte dell'Acquoria below Tivoli,[97] Ponte San Martino in the Val d'Aosta,[98] and two bridges on the Via Aurelia near Santa Marinella.[99] In Gaul, the bridge at Vaison is a well-known example.[100] Unfortunately, none of these, with the exception of the first, can be regarded as certainly dated. But arches of the same type in buildings other than bridges are common enough to allow a *terminus post quem* for this type of construction to be fixed with a fair degree of certainty. The arches in the back wall of the Forum of Augustus and the arch of the Aqua Marcia that now forms the inner face of Porta Tiburtina[101] are probably the earliest examples in Rome. Neither is as early as the Augustan reconstruction of the Flaminia. If Ponte Spiano does not belong to this period, there is no reason why it should not represent a later phase of the reconstruction. It is almost certainly earlier than the beginning of the second century A.D., when an entirely different style of masonry seems to have been in favour in this part of the road (below, p. 110).

24. *Ponte Etrusco, Scirca* (pls. XVII, 3, XIX, 4).

Map. 116 II (Fabriano), 43°–21′–00″ N, 00°–16′–15″ E.

Km. 204·0 (206·2 on map); Ashby–Fell, p. 181; Martinori, p. 175; Stefani, *op. cit.*, p. 165, fig. 15.

One-and-a-half kilometres beyond Ponte Spiano the modern road passes a little to the left of an ancient bridge. Ashby and Fell give its span as 4 m., and its width, excluding the modern parapets, as 9·50 m. Stefani's photograph shows a very massive construction, with piers some six courses high, topped with a slightly projecting impost-course and an arch of about 16 voussoirs, semicircular on both extrados and intrados. Most of the arch has now been destroyed, but the abutments and one buttress are in a fair state of preservation. They are built of an intractable, pinkish conglomerate, locally

[96] See above, p. 100, n. 76.

[97] T. Ashby, *PBSR*, III, 1906, p. 151, fig. 15.

[98] See above, p. 96, n. 66. Only the lower parts of the arch are involved.

[99] See above, p. 99, n. 69.

[100] A. Blanchet, *Carte Archéologique de la Gaule Romaine*, Fasc. VII (*Département de Vaucluse*), Paris, 1939, p. 50, pl. 1.

[101] The Forum of Augustus was dedicated in 2 B.C.; the arch of the Aqua Marcia bears an inscription of 5 B.C. (*CIL* VI, 1244).

known as 'pietra grigna', in courses about 0·80 m. high, each block being roughly a cube. The blocks are roughly dressed, with narrow marginal bevelling, and are not very well jointed; the joints of one course tend to coincide with those of the next. The whole bridge presents an appearance of untidy near-regularity and unnecessary heaviness. Martinori wrongly considered it to be Etruscan. For the date, see below, p. 110.

25. *Ponte Voragine.*

Map. 116 III (Gubbio), 43°–25′–50″ N, 00°–11′–10″ E.

Km. 218·4 (220·5 on map); Montecchini, pp. 14–15; Ashby–Fell, p. 182; Martinori, p. 178.

Between the summit of the Scheggia Pass and the village of Pontericcioli, two ancient bridges existed in Montecchini's time, Ponte Voragine and Ponte Grosso (no. 26); I have not been able to find any trace of antiquity in either of their present-day successors. The first, Ponte Voragine, marks the boundary between the provinces of Perugia and Pesaro. Montecchini describes it as having a single semicircular arch of 3 m. span, of which the down-stream side was preserved, together with the whole of the further bridge-head. Both arch and bridge-head were built of roughly dressed, rectangular blocks of great size.

Just beyond the bridge there was a large substruction wall bearing an inscription of Hadrian (*CIL* XI, 6620), which, if preserved, might have given considerable assistance in the dating of other works of this type in the area. It would appear from Montecchini's description that this wall was built of the same type of vast 'pietra grigna' masonry that was used in Ponte Etrusco (no. 24), in the great buttressed substruction wall just before Pontericcioli,[102] and in numerous bridges in the Burano Valley (below, pp. 108–9).

26. *Ponte Grosso, Pontericcioli.*

Map. 116 III (Gubbio), 43°–26′–20″ N, 00°–10′–45″ E.

Km. 221·7 (224·2 on map); Montecchini, pp. 17–19.

The second of the bridges recorded by Montecchini (see also no. 25) in this area is Ponte Grosso, which crossed the Fosso della Scheggia just before its confluence with the Burano. It had two arches, each of 3·40 m. span, with a central pier 2·60 m. wide and 8 m. of embankment at the far end. The overall width was 10 m., but of this the parapets occupied 3 m. The pier had a small cut-water. The voussoirs of the arch were 0·95 m. high and the impost-course projected 0·20 m. The material was 'pietra corgnola', as in Ponte Spiano (no. 23) and in the other 'Ponte Grosso' (no. 28), which is still standing in the Foci di Cagli.

27. *Culvert at Villa d'Azzo.*

Montecchini, p. 31; Martinori, p. 179.

Just beyond Villa d'Azzo (Km. 225·5), Montecchini records a culvert, apparently similar to those beyond Ponte dei Ciclopi (no. 31); it had a span of 1·15 m. and a height of 1·70 m., and was built of enormous blocks, one of which measured 3·40 m. in length, 0·80 in breadth and 0·40 in thickness. I have not seen it.

[102] Km. 219·6 of the modern road; see Montecchini, pp. 19–20; Ashby–Fell, p. 182.

28. *Ponte Grosso in the Foci di Cagli* (pl. XVIII, figs. 1, 2).

Map. 116 IV (Cagli), 43°–30′–02″ N, 00°–10′–50″ E.

Km. 227·5 (230·0 on map); Montecchini, pp. 36–7; Ashby–Fell, p. 183, pl. XVII, no. 1; Martinori, pp. 179–80; Blake, p. 215.

In its magnificent setting and fine state of preservation Ponte Grosso is today by far the best extant Roman bridge between Foligno and Rimini. The right-hand side is complete except for the parapet, while on the left the far bridge-head is well preserved, and the arches, though somewhat broken, show little sign of modern repairs. The wall above the arches on the left and the near left bridge-head are comparatively recent. The two arches have spans of about 7 m. each and a width of 6·50 m. A peculiarity of the plan is that the bridge-heads are both considerably wider than the arches, a feature also found in the later forms of Ponte Manlio (no. 33) and in a fine bridge at Martorell in Spain;[103] in the latter case, however, the widening was intended only to provide room for a pair of triumphal arches. The central pier of Ponte Grosso is of unusually substantial construction and was presumably provided with a cut-water, though that now visible is not ancient. There was no corresponding 'tail' at the down-stream end of the pier.

The arches are supported on a thin, plain string-course, and are of straightforward construction. A few voussoirs break the line of the otherwise semicircular extrados, but are not cut to fit the courses of the vertical wall. Both the outer faces of the arches and the interior of the vault are cut to a fairly smooth face, in marked contrast to the rest of the bridge, where no attempt was made to add elegance to the stone, which, though by no means unpleasant to the eye, is too hard and brittle to be easily worked. It is a Lias limestone similar to that used in Ponte Spiano (no. 23), and splits easily into slabs about 0·20 m. thick. The vertical walls, together with the bridge-heads, are capped by a string-course that acted as the bottom course of the parapet.

There are no particular features in this bridge that allow of accurate dating. It was obviously intended to stand up to a river of unusual violence, and it is principally to this that it owes its exceptionally massive construction and its unusual plan, in which the bridge-heads perform a definite function as buttresses for the arches. Both the plan and the masonry bear some resemblance to the second, possibly Augustan, phase of Ponte Manlio (no. 33, see below, p. 110).

A short way beyond Ponte Grosso, one wall of a small ancient culvert is preserved under the modern road. The masonry is similar to that of Ponte Grosso.

29. *Ponte Alto.*

Map. 116 IV (Cagli), 43°–30′–30″ N, 00°–11′–10″ E.

Km. 228·6 (231·1 on map); Montecchini, pp. 39–40; Ashby–Fell, p. 183; Martinori, p. 180.

Ponte Alto, a little over a kilometre beyond Ponte Grosso, is now disused. About seven courses of Roman work are visible at the base of either bridge-head. The masonry is rather similar to that of Ponte Spiano (no. 23), but the blocks are slightly smaller. The single arch, now fallen, and the upper parts of the bridge-heads, are of more recent

[103] José de C. Serra Ráfols, in *Carta Arqueológica de España, Barcelona*, Madrid, 1945, pp. 127–8, fig. 19; B. Taracena, in *Ars Hispaniae*, vol. II, Madrid, 1947, fig. 1. Only the bridge-heads are ancient.

date. The span of 18 m. and the consequent height of the road-way above the river banks suggest that there were originally two arches. There are, however, no remains of a central pier.[104]

30. *Ponte dei Ciclopi.*

Map. 116 IV (Cagli), 43°–31′–00″ N, 00°–11′–15″ E.

Km. 229·6 (232·1 on map). Montecchini, pp. 40–41; Ashby–Fell, p. 183; Martinori, p. 180.

The bridge has been destroyed and roughly rebuilt from its own wreckage: it is not in use. According to Montecchini, who gives a fairly full description, it was of two periods, both ancient. In the first, of which only the lower parts of the abutments remained, slabs of pietra corgnola were used. In the second, represented by the single arch, of 3·75 m. span, and the embankments leading up to it, the material was pietra grigna in blocks similar to those of Ponte Etrusco (no. 24). The main importance of Ponte dei Ciclopi is that it confirms the impression gained from Ponte Manlio (no. 33) that the use of pietra corgnola in this sector of the road is earlier than that of pietra grigna (below, p. 110).

31. *Two Culverts beyond Ponte dei Ciclopi* (pl. XIX, fig. 1).

Map. 116 IV (Cagli), 43°–31′–05″ N, 00°–11′–20″ E.

Km. 229·8 (232·3 on map).

A little beyond Ponte dei Ciclopi, two culverts constructed of very heavy blocks of pietra grigna still do duty under the modern road. They may be the same as the two mentioned by Montecchini (pp. 40–1), but are considerably larger. Both are similar in design to that 6 km. north of Nocera Umbra (no. 22), but are built of larger, very roughly dressed blocks,[105] while the top course of the interior walls projects so as to reduce the span of the cap-stones, in the manner of a primitive corbelled arch. Both retain traces of embankment walls, and carried a road more than 10 m. wide.

32. *Ponte Taverna.*

Map. 116 IV (Cagli), 43°–32′–35″ N, 00°–11′–55″ E.

Not on the modern road; Montecchini, pp. 41–2; Ashby–Fell, p. 183; Martinori, p. 180.

Just before reaching Cagli, the ancient Via Flaminia crossed the Burano by a bridge now known as Ponte Taverna, some way to the right of the modern bridge. Montecchini states that it had two arches, that on the near side having a span of 4·80 m., that on the far side 16·20 m. The foundations of the near bridge-head, together with the central pier and a pier embedded in the far bank, were built of large slabs, apparently similar to those of Ponte Grosso (no. 28). Since the pier in the far bank had a cut-water, another arch presumably followed. Possibly, as in Ponte Alto (no. 29), the main span of 16·20 m. was originally divided into two, making a total of four arches.

The two standing arches are mediaeval, and even in Montecchini's time were in a

[104] Montecchini *loc. cit.* For a conjectural dating, see below, pp. 110, 117.

[105] The style of masonry is similar to that of Ponte Etrusco (no. 24) and of the third phase of Ponte Manlio (no. 33).

very poor state. Hardly any of the Roman work is now visible, except a few loose slabs in the river-bed by the near bank.

33. *Ponte Manlio, Cagli* (pl. XIX, figs. 2–3).

Map. 116 IV (Cagli), 43°–33′–00″ N, 00°–11′–55″ E.

Km. 234·1 (236·5 on map); G. Mochi, *Storia di Cagli nell' Età Antica e nel Medio Evo*, pt. I, Cagli, 1878, pp. 49–51, pl. III; Montecchini, pp. 47–50; Ashby–Fell, p. 184, pl. XVII, no. 2; Martinori, pp. 181–2, fig., p. 181; Blake, p. 215, pl. 25, fig. 2.

Immediately beyond the town of Cagli, Ponte Manlio (or Mallio), though now disused, remains in a very complete state. The existing structure is of three well defined periods. To the first period belong the main arch with the walling of the spandrels, a massive string-course, and a good deal of the parapet. Three embankment walls were subsequently added at an angle to the original bridge. Finally, three more walls were built, parallel to the main axis of the road and composed, like the arch, of enormous blocks of pietra grigna. A second and much smaller arch at the far end of the bridge belongs to the same period as the main arch.

The main arch, which has a span of 11·66 m. and a width, excluding the projection of the key-stones, of 8·85 m., is composed of 21 voussoirs (Ashby–Fell). The intrados is semi-circular; the extrados would be better described as polygonal, and the voussoirs flanking the keystone break the line completely. The average height of the voussoirs is about 1·50 m., and their width at the intrados 0·75 m; all are rough-faced, drafted to a width of 15 cm. at the bottom, and bevelled or drafted on the other three edges. The vault is smooth and contains stones of up to about 1·05 m. in length. The lower part of the arch is buried in the gravel bed of the stream, but Mochi, who claimed to have excavated it, asserts that the arch is not semicircular but in fact circular, like that of a modern bridge on the Scheggia Pass.

The wall above the arch is very solidly built of pietra grigna blocks of rather irregular size, bevelled at the edges and surprisingly accurately jointed. Above this comes a string-course of similar blocks, and finally a very plain parapet, which appears to be original.

The smaller arch is also largely buried; it has 9 voussoirs, each 0·90 m. high, and a span of 3·40 m. It is generally similar in style to the other, but lacks the wide drafting of the intrados.

The walls of the second period fan out at an angle, to provide at the same time a protection for the river-banks and a considerable widening of the road; they occur on both sides at the near end of the bridge and on the right only at the far end. In material and construction they are indistinguishable from those of Ponte Grosso (no. 28). The pietra corgnola slabs of which they are built are roughly dressed, about 0·25 m. high, and and generally well jointed. An examination of their junctions with the first-period walls shows that these continue behind them and are thus certainly earlier.

The third period is marked by the reversion to pietra grigna, though the work of this period is distinctly inferior to that of the first; the blocks are as large, or rather larger, and of more regular shape, but are poorly jointed and of untidy appearance. Two of the walls of this period merely prolong the pietra corgnola walls, parallel to the road; but that to the left of the road beyond the main arch, where there are no remains of the second period, butts directly on to the walling of the spandrel and in effect replaces the

original side wall, though it allows a slightly greater width to the road. The right-hand third-period wall on the far side is reinforced with four buttresses, each 1·60 m. square and 4·50 m. apart.

Chronology. Ponte Manlio is the principal key to the dating of most of the bridges in the Appennine sector of the Flaminia. Of those others that are still preserved, none resembles the work of the first period of Ponte Manlio. That of the second period, however, bears a strong resemblance, both in material and in style of masonry, to what may conveniently be referred to as the 'pietra corgnola group', consisting of Ponte Grosso (no. 28), Ponte Alto (no. 29), Ponte Taverna (no. 32), the Acqualagna culverts (no. 34, i, ii, iii) and the Ponticello dell'Abbazia (no. 35).[106] In view of the small size or bad preservation of all these bridges (with the exception of Ponte Grosso), the comparison is necessarily limited to the masonry, and other constructional features cannot be taken into account.

Similarly, the third period of Ponte Manlio may fairly be regarded as contemporary with the second group of Appennine bridges, which comprises Ponte Etrusco (no. 24), the second period of Ponte dei Ciclopi (no. 30), the two culverts near it (no. 31) and a large buttressed substruction wall outside the village of Pontericcioli.[107] All these have very heavy pietra grigna masonry in badly bonded courses. Buttresses occur in several cases, and are large and of square plan.[108] The fact that this group is later than the pietra corgnola bridges is demonstrated not only in Ponte Manlio but also in Ponte dei Ciclopi.

While the relative dating is thus assured, the only reliable evidence of the absolute chronology has unfortunately been destroyed. This was the substruction wall near Ponte Voragine (no. 25), which bore an inscription of Hadrian. Although the exact nature of this wall is not certain, it appears from Montecchini's description to have resembled, in some particulars at least, the third-period walls of Ponte Manlio.

At the other end of the scale, the main arch of Ponte Manlio is also of uncertain date. The projection of the key-stones recalls Ponte Cardaro (no. 14).[109] The wide drafting of the intrados is similar to that used in many early Imperial buildings in Rome, but may not in this case be original.[110] Apart from these two considerations, neither of which is of great importance, there is no reason why the earliest parts of the bridge should not be of Republican date. Even if an uncharitable view is taken of the claim of Augustus to have repaired the whole length of the road, one would expect to find evidence of Augustan work in a group of bridges rather than in an isolated example. In the Appennine sector the only possible choice is the 'pietra corgnola group' already mentioned. The fact that these bridges bear little resemblance to any elsewhere in Italy is due largely to the stone of which they are built: there is no particular reason why they should not be Augustan. Even Ponte Spiano, which, though of the same material as the

[106] Ponte Spiano has been omitted from this list on account of the radical difference in the construction of its arch. The pietra corgnola abutments of the first phase of Ponte dei Ciclopi have disappeared, but enough remains of the pietra grigna masonry of the second phase to show that it was of the same type as that of the third period of Ponte Manlio.

[107] See above, p. 106, n. 102.

[108] For more notable examples of buttresses in the early second century A.D., see below, no. 36, p. 112.

[109] Ponte del Diavolo on the Via Latina (above, p. 89, n. 34) also has projecting key-stones, but they are of very tall, narrow form, unlike those of Ponte Cardaro and Ponte Manlio.

[110] For parallels, see above, p. 98, n. 69. The absence of this drafting in the smaller arch may indicate that it was executed after the latter had been buried, either by gravel from the river-bed or by the successive lengthening of the substruction walls.

rest, is constructionally more advanced, need not be later than the end of the first century B.C.[111]

On this somewhat inadequate evidence, therefore, the first period of Ponte Manlio can be provisionally dated to the late Republic, the second, together with the 'pietra corgnola' group of bridges, to the Augustan period, and the third to the repairs of Trajan or Hadrian. In no case is it possible to find any external parallels worthy of the name.

34. *Three Culverts north of Acqualagna.*

Map. 116 IV (Cagli), 43°–37′–25″ to 43°–37′–40″ N, 00°–13′–35″ to 00°–13′–40″ E.

Km. 242·9 (i); 243·0 (ii); 243·5 (iii); Montecchini, p. 62; Ashby–Fell, p. 185.

In the stretch of the Via Flaminia between Ponte Manlio and the Furlo Pass, Montecchini (pp. 51–63) found at least ten ancient bridges and culverts. Ponte della Peperia, Ponte di Falconara and the bridge at Smirra have been entirely modernised. Montecchini's 'diversi chiavicotti', south of Acqualagna, and the remains of the large bridge over the Candigliano in the village itself, have all disappeared. The Ponticello del Casino, the Ponticello delle Case Nuove, and a third of the same type are ancient. All are lighter, neater versions of no. 22 (above, p. 104), differing from it in that the upper courses converge in order to reduce the span of the cap-stones. The material is a pinkish variety of pietra corgnola, cut in slabs some 0·30 m. thick. The largest of the three culverts is the Ponticello delle Case Nuove, which has a span of 1·40 m. The last of the three retains its embankment walls on both sides of the road, which here had a total width of 10·50 m. The whole group is perhaps of Augustan date (see above, s.v. no. 33).

35. *Ponticello dell 'Abbazia.*

Map. 116 IV (Cagli), 43°–38′–05″ N, 00°–14′–30″ E.

Km. 245·2 (247·7 on map); Montecchini, p. 63; Ashby–Fell, p. 185; Martinori, p. 183.

Apart from a few remains of substruction walls, the only other trace of the ancient road before the Furlo is the so-called Ponticello dell'Abbazia. It consists of a substruction wall of slabs of pietra corgnola, some 3 m. high and 50 m. long, protecting the right-hand side of the road from erosion by the main stream of the Candigliano. The masonry is similar to that of the second period of Ponte Manlio (see above, no. 33, p. 110). The wall is broken by two culverts about 30 m. apart. The first has a span of 2·10 m., and is traceable under the whole width of the road (here 11·80 m.). The arch has 11 voussoirs, averaging 1 m. in height and 0·30 in width; the key-stone is one-and-a-half times the normal width, and the bottom voussoir at either side is nearly as large. The stones of the vault are rough-faced like the rest, and up to 1·80 m. in length (average, well over 1·00). Below the spring of the arch, nothing is visible except a projecting impost-course 0·27 m. high. The second culvert is largely blocked by mud, but appears to be similar to the first. It has a span of about 2·80 m., with some 13 voussoirs, each 0·90 m. high and 0·35 wide.

[111] Ponte Spiano seems in any case to have been rather an unnecessary luxury, in view of the size of the stream, which is now contained in a two-foot drainpipe running under the road. As such, it is likely to have been built at a time when the rest of the road was already in a good state of repair.

36. *Ponte di Traiano, Calmazzo.*

Map. 109 II (Isola del Piano), 43°–40′–30″ N, 00°–18′–00″ E. Montecchini, pp. 81–2; A. Vernarecci, *Fossombrone*, Fossombrone, 1903, pp. 71–2, with pl.; Ashby–Fell, p. 186; Martinori, p. 190.

After leaving the Furlo, the road runs along the left bank of the Candigliano as far as the Metaurus, which it crosses on a bridge immediately below the village of Calmazzo. The present bridge replaces an ancient one destroyed during the war, of which the only record is Montecchini's description, supplemented by Vernarecci's photograph.

The bridge was of three arches, that nearest the south bank having a span of 4·00 m., the other two of 11·30 m. each. Of the original structure only the piers, the bridge-heads, the small arch, and the walls supporting the banks survived. The material was a local limestone. The piers were 3·10 m. thick, and had cut-waters on the up-stream side, which were built up to a considerable height above water-level. Down-stream, each pier had a rectangular buttress reaching up to the parapet. The two large arches were of more recent brick-work, as was most of the walling of the spandrels.

An inscription of Trajan, *CIL* XI, 6622, may belong to this bridge, though it seems to have been found some distance away from it. The date of the slab, A.D. 115, does not seem unreasonable for the bridge. The pier-buttresses bear some resemblance to those of the Pons Aelius (Ponte S. Angelo) in Rome (finished A.D. 134),[112] and to those of the bridge of Trajan at Alcántara in Spain (A.D. 105–6).[113]

37. *Small Bridge at Calmazzo.*

Map. 109 II (Isola del Piano), 43°–40′–40″ N, 00°–18′–05″ E; Montecchini, p. 86; Ashby–Fell, p. 187.

Of this bridge Montecchini states that it had a span of 6·30 m. and contained a few traces of ancient construction. In its present state it is obviously not new, but does not appear to be of any great antiquity.

38. *Ponte di Diocleziano.*

Map. 109 II (Isola del Piano), 43°–41′–00″ N, 00°–19′–30″ E.

Montecchini, p. 87; Vernarecci, *op. cit.*, pp. 72–3, with pl.; Ashby–Fell, p. 186, n. 6, pl. XVIII, 2; Martinori, p. 190.

Half way between Calmazzo and Fossombrone, about 150 m. to the right of the main road, there was until recently a fine bridge over the Metaurus. It did not belong to the Flaminia, but connected it with a large tract of country on the right bank of the Metaurus, which was not otherwise easy of access.

Since it has suffered the same fate as Ponte di Traiano (no. 36), the only information available as to its construction is that given by Vernarecci's plate, reproduced also by Ashby and Fell. No adequate description of it appears to have been published. The single arch sprang directly from the rocks that here confine the river in a narrow gorge.

[112] Anderson–Spiers–Ashby, pl. LXVI.

[113] E. Hübner, *Annali dell'Instituto di Corrispondenza Archeologica*, 1863, pp. 173–94, with *Monumenti dell' Instituto*, VI–VII, 1857–63, pls. LXXIII–LXXV; C. Merckel, *Die Ingenieurtechnik in Alterthum*, Berlin, 1899, p. 299, figs. 102–3; B. Taracena, in *Ars Hispaniae*, vol. II, Madrid, 1947, pp. 17, 20, fig. 6. Two other bridges in Spain, those at Mérida and Salamanca, also have buttresses of this type, but are not certainly dated; Taracena, *op. cit.*, p. 17, figs. 4–5: Merckel, *op. cit.*, p. 301, considered both to be Trajanic.

The outer voussoirs were of cut stone, but the vault was of roughly dressed stones, laid in irregular courses. The arch was outlined by a heavy moulding, made, like that of Ponte d'Augusto at Narni (no. 12), in slabs separate from the voussoirs. The crown of the arch had been repaired on several different occasions, and a lighter moulding substituted for the original one at some points. The walls were of roughly dressed limestone slabs, and showed signs of numerous repairs.

The bridge is chiefly of interest for the inscription, *CIL* XI, 6623, which recorded the building or repair of a bridge over the Metaurus by Diocletian and Maximian. The origin of the stone is not certain, and it is quite possible that it either belonged to some bridge that has now disappeared or else commemorated a repair to Ponte di Traiano. Ponte di Diocleziano, at least, had no specifically ancient characteristics.

B. VIA FLAMINIA: ALTERNATIVE ROUTE, NARNIA–FULGINIUM.

39. *Ponte Toro, Papigno.*

Map. 138 I (Ferentillo), 42°–33′–10″ N, 00°–15′–10″ E.

G. Riccardi, *Ricerche sulla Caduta delle Marmore*, Rome, 1825, pp. 71–4, pl. II; L. Lanzi, *Terni* (*Italia Artistica*, no. 55), Bergamo, 1910, fig. p. 97; idem, *Not. Scav.*, 1914, pp. 66–8, figs. 46, 49; Ashby–Fell, p. 168; Blake, p. 214.

Six kilometres beyond Terni by the modern road, and a little over a kilometre beyond the village of Papigno, there was discovered in 1819, on the left bank of the Nera, a single arch of an ancient bridge. At the instance of Riccardi it was excavated, and, though much overgrown, is still visible. The plan of the whole bridge is quite uncertain; Lanzi found traces of a flood-passage between the extant arch and the stream, but today it is almost impossible to see this.

The arch has a span of some 9 m. and consists of about 18 voussoirs. These are rather squat in shape and are bevelled on three sides, with pronounced drafting of the intrados. The vault is smooth. The total width of the bridge is only 2·20 m., but it appears that an older bridge, of which the arch-springing survives, was somewhat wider. The masonry of the vertical walls is fairly regular. The blocks average 0·60 m. in height and few are more than 1 m. long. They are roughly dressed, with bevelled edges. The core of the bridge is of very weak concrete.

Dr. Blake is probably right in regarding Ponte Toro as Augustan. It bears a general resemblance to Ponte Cardaro (no. 14), and its poor finish may be due largely to the coarseness of the travertine of which it is built.

40. *Ponte Sanguinario, Spoleto.*

Map. 131 II (Spoleto), 42°–44′–25″ N, 00°–17′–10″ E.

A. Sansi, *Degli Edifici e dei Frammenti Storici delle Antiche Età di Spoleto*, Foligno, 1869, pp. 217–22, pl. IX; Ashby–Fell, pp. 168–9. Martinori, pp. 135, n. 2, 137; C. Pietrangeli, *Spoletium* (*Italia Romana, Municipi e Colonie*, I, i), Istituto di Studi Romani, 1939, pp. 49–50, pl. XI; Blake, pp. 214–5, pl. 25, fig. 1.

The ancient bridge that carried the Via Flaminia over the Torrente Tessino is still

to be seen in a good state of preservation under Piazza Garibaldi. The river has changed its course to the extent of about 80 m.

The bridge was excavated in 1817, re-excavated in 1843, and finally roofed over in 1848. Two arches are now visible; a third was partially excavated to the south of these, and there was probably once a fourth, since the northernmost of the piers now visible has a cut-water. The width of the arches is 4·47 m., and, of the two in the excavated area, the northern has a span of 6·22 m. and the southern 6·82 m. The height of the bridge in its present state is about 8 m.[114]

The piers are slightly oblique to the line of the road and are remarkable for their thickness of only a little over 1·50 m. The second of the three now visible has lost its core, leaving an empty space down the centre, which has been mistaken for a flood passage.[115] All were provided with pointed cut-waters, but it is not possible to see whether there are any corresponding 'tails' down-stream. Each pier is capped by a row of stones extending to its full width, which serve as the springing of the arches. Three of each row project beyond the line of the intrados, to support the centering used during construction. Apart from these, the voussoirs are of fairly standard size, averaging 0·80 m. in height and 0·60 in width. They are accurately cut to make a semicircular extrados, and are bevelled on all four external edges.

The vertical wall, which is preserved up to the first course above the crowns of the arches, is of long, well cut blocks of regular size, with bevelled edges and fairly smooth bossed centres. Each block has a hole on its outer face, near the upper edge, for convenience in lifting. The material throughout is travertine, with fine joints and carefully worked outer surfaces. There seem to be remains of an earlier bridge incorporated into the southernmost of the piers now visible.

Chronology. Opinions differ as to the date of Ponte Sanguinario. Sansi suggested that it might be one of the bridges built by the censors of 174 B.C., Q. Fulvius Flaccus and A. Postumius Albinus.[116] Frothingham attributed to it a late Republican inscription built into the campanile of the Cathedral (*CIL* XI, 4807). This refers to the building of a bridge by the *quattuorviri* of Spoletium; but since there were several bridges in the immediate vicinity of the town, it is not necessarily to be connected with Ponte Sanguinario.[117]

Dr. Blake considers it early Augustan, and probably rather earlier than most of the Augustan bridges on the main line of the Flaminia. It has three features that distinguish it from these, namely its width, its thin piers, and the use of a single row of blocks to form the springing of two comparatively large arches. Its width may be explained as due to the comparative unimportance of the road that it carried (cf. Ponte Toro, no. 39). Width is not, in any case, a good criterion of date. The thin piers are a feature of greater interest. Other examples are to be found in Ponte di Pietra at Verona,[118] Ponte S.

[114] Measurements taken from Sansi, *op. cit.*, pp. 217–8.

[115] Frothingham and Pietrangeli; Sansi, however, states that occasional blocks run right through the pier. The space, unfortunately, has had to be filled in, in the interest of stability.

[116] Livy, XLI, 27. 'Censores vias sternendas silice in urbe, glarea extra urbem substruendas marginandasque primi omnium locaverunt, pontesque multis locis faciendos'.

[117] Pietrangeli rejects the inscription and proposes an Augustan date for Ponte Sanguinario on the basis of its resemblance to Ponte Calamone and Ponte Cardaro.

[118] I. A. Richmond and W. G. Holford, *PBSR*, XIII, 1935, pp. 69–76. Ponte di Pietra does not conform to the Augustan plan of Verona, and one end of it was blocked by the circus. It is, therefore, likely to be earlier than either. P. Marconi (*Verona Romana*, Bergamo, 1937, pp. 26–33, figs. 14–19), gives a description and suggests a

Lorenzo at Padua[119] and the bridge of the Via Aemilia at Savignano sul Rubicone.[120] All these are probably of Republican date. The sharing of the springer between two arches, a natural result of the thinness of the piers, is very rare in bridges, but is common enough in amphitheatres, such as those at Verona,[121] Pola[122] and Arles.[123] One of the earlier examples is to be seen in Rome, in the tabernae of the Forum of Julius Caesar, and, possibly still earlier, one in the arcading of the theatre at Ferento.[124]

In view of these considerations, and especially of the second, there seems to be some ground for ascribing Ponte Sanguinario to a period earlier than Augustus, probably around the middle of the first century B.C.

CHRONOLOGICAL SUMMARY

From the above account of the ancient bridges on the Via Flaminia, it will be seen that four main classes of evidence have been taken into account in the proposed dating of bridges on the Flaminia and elsewhere. These are:

(*a*) Literary sources.
(*b*) Inscriptions.
(*c*) Bridges in which a sequence of two or more periods can be recognised.
(*d*) Constructional parallels in buildings other than bridges.

The literary sources for the numerous repairs and reconstructions of the Flaminia are useful, but cannot be regarded as complete. Besides the date of the original building of the road, they give information of a general improvement of the roads in 174 B.C., of the building of the Pons Mulvius in 109, the probable building of the Pons Minucius about 65, and of the Augustan reconstruction begun in 27 B.C.

The inscriptions of the Flaminia are, on the whole, disappointing. The earliest of any real value is that of Vespasian on the Furlo Tunnel; while the only ones that have much bearing on the bridges in particular are those of Hadrian from near Ponte Voragine, of Trajan from Ponte di Traiano, and of Diocletian and Maximian from Ponte di Diocleziano.

So far as literary and epigraphic sources are concerned, the history of the Flaminia may be roughly summarised as follows:

220 B.C. Original building or regularisation of the road.
174 B.C. Improvements to various roads; bridges built in some places (p. 114, n. 116).
109 B.C. Pons Mulvius built by Aemilius Scaurus (no. 1, p. 80).
*c.*65 B.C. Probable building of the unidentified Pons Minucius (no. 10, p. 91).

pre-Roman date. This suggestion is rendered improbable by the core of the bridge, which was partially of concrete (visible in *Works of Art in Italy, Losses and Survivals in the War*, Pt. II, H.M.S.O., 1946, p. 61).

[119] Giandomenico Polcastro, *Notizia della Scoperta in Padova d'un Ponte Antico, con una Romana Iscrizione*, Padua, 1773. The inscription (*CIL* V, 2845) records that a board of *adlegatei pontem faciendum D.D.S. locarunt, eidemque probarunt*, and resembles that of the Pons Fabricius (62 B.C.) in being cut on one of the arches and not, as later became the rule, on a separate slab.

[120] A. Scarpellini in *Emilia Romana*, vol. I, Florence (Istituto di Studi Romani), 1941, p. 195, fig. 7. The bridge was destroyed during the war.

[121] Durm, figs. 251, 335; Blake, pp. 222–3, pl. 26, fig. 4.

[122] Durm, fig. 757; Blake, p. 223. It can hardly be earlier than the foundation of the Augustan colony.

[123] Durm, fig. 335.

[124] Durm, fig. 251; A. Scriattoli, *Viterbo nei suoi Monumenti*, Rome, 1915–20, figs. 646–7. Dr. Blake (pp. 221, 224, n. 2, 240) regards it as belonging to the middle of the first century B.C.

27 B.C. General reconstruction of the Via Flaminia, with its bridges, begun by Augustus, *Mon. Anc.* (Latin) IV, 19–20; (Greek) XI, 6–9; Dio, LIII, 22.

A.D. 77. Tunnel in the Furlo Pass cut by Vespasian. *CIL* XI, 6106.

A.D. 115. Improvements under Trajan and Hadrian (nos. 25 and 36, pp. 106 and 112).[125]

After A.D. 293. Building or repair of a bridge over the Metaurus by Diocletian and Maximian (no. 38; *CIL* XI, 6623).

Bridges in which a sequence of two or more periods is clearly distinguishable are few in number on the Flaminia, as on most Roman roads. The Pons Mulvius (no. 1) and Ponte d'Augusto (no. 12) are both in their different ways irrelevant to the main question, in that the first, although a good example of a Roman bridge in the strictest sense of the word, has little bearing on contemporary work outside the city; and the second is on so vast a scale that any comparison of it with other bridges on the Flaminia must be limited to details, such as the dressing of the masonry. Ponte del Diavolo (no. 18) and Ponte Toro (no. 39) are likewise of little assistance. Both are of rather poor, local workmanship. In Ponte del Diavolo the work of the second period is not easily distinguishable from that of the first, and in Ponte Toro too little of the first-period arch remains to allow of any kind of reconstruction. Ponte Manlio (no. 33), on the other hand, presents three distinct styles of masonry, two of which are common in the district. The relation between these two is confirmed in Ponte dei Ciclopi (no. 30).

Apart from the instances given in the preceding paragraphs, all dating, both relative and absolute, has had to be based on resemblances between the bridges in question and other buildings scattered throughout Italy, and even in the provinces. Allowances must, of course, be made for local differences in style, especially in decoration and exterior finish. This makes it very difficult to date the smaller bridges, many of which are of such simple construction that their only distinctive features are details that depend to a large extent on the type of material employed. For instance, in the Ponticello dell'Abbazia (no. 35) or the three culverts near Acqualagna (no. 34), the construction is so straightforward that the only possible criteria of date are the stone used and the quality of the finish. Fortunately, in these cases there is plenty of similar work close at hand. Were this not so, there would be little hope of attributing them more closely than any period between the rough limits of 100 B.C. and A.D. 200.

There are at present no bridges on the Flaminia that are likely to belong to the first two stages mentioned above, with the possible exception of that in Valle Petrosa (no. 16).

In 109 B.C. the Pons Mulvius was built by M. Aemilius Scaurus, and it was perhaps at about this time that certain improvements were carried out on the stretch of road between Rome and Narni. The bridge at Torre Pastore (no. 6), the Muro del Peccato in the Treia Valley (no. 7) and Ponte Picchiato (no. 9) are all of a style that would be expected at this period.

Of the Pons Minucius we have no certain knowledge, except that it was omitted by Augustus in the reconstruction of 27 B.C.: there is, however, a strong presumption that it was built by one Minucius Thermus about 65 B.C. Of the extant bridges on the Flaminia only Ponte Manlio (no. 33) and Ponte Sanguinario (no. 40) are likely to belong

[125] *CIL* XI, 6619 records the rebuilding of a substruction wall near Massa Martana in A.D. 124.

to this period. Nissen's identification of the now destroyed Pile di Augusto (no. 10) below Otricoli with the Pons Minucius is uncertain, but by no means unreasonable.

Augustus in the *Monumentum Ancyranum* claimed to have rebuilt all the bridges between Rome and Rimini, *praeter Mulvium et Minucium*. Whether this claim is literally true remains to be proved. Certainly there is a considerable weight of evidence against it. On the other hand, traces of Augustan work can be found in some of the bridges between Rome and Narni and in a large proportion of those on the subsequent stretches of the road. These include the bridge over the Valchetta (no. 3), Ponte Ritorto (no. 5), the Voltarella (no. 7, pp. 86–7), the earliest parts of Ponte d'Augusto (no. 12), Ponte Calamone (no. 13), Ponte Cardaro (no. 14), Ponte Grosso (no. 28), Ponte Alto (no. 29), Ponte Taverna (no. 32), the second phase of Ponte Manlio (no. 33), the three culverts near Acqualagna (no. 34), Ponticello dell'Abbazia (no. 35) and Ponte Toro (no. 39).

There are in addition a number of bridges in all parts of the Flaminia that cannot be dated more precisely than that they probably belong to the early Empire. These include the Pons Mulvius (no. 1; repairs to arches 2 and 3), Ponte d'Augusto (no. 12; building or rebuilding of pier III and the upper walls), the bridge at S. Giovanni de' Butris (no. 15), Ponte Fonnaia (no. 17) and Ponte Spiano (no. 23). To account for these, there is the possibility of late Augustan activity, and considerable evidence of repairs under the Flavians, and under Trajan and Hadrian (p. 116). The two last Emperors were probably responsible for a large group of bridges on the Appennine sector, including Ponte di Traiano (no. 36) and the final form of Ponte Manlio (no. 33).[126]

As evidence of still later work, we have one inscription of Diocletian, a number of milestones (which imply the continuation of Imperial interest in the road but mention no specific repairs), and a few probabilities. The most that can be said of the first is that the bridge to which it referred has been destroyed. The probabilities include a repair of the Pons Mulvius by Constantine and the rebuilding, presumably at some comparatively late date, of the fourth arch of Ponte d'Augusto. The fact that there are signs of continued activity at these three points suggests that under the later Empire such was the exception rather than the rule, and that bridges were only repaired when the rivers that they crossed could not be forded in dry weather.

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[126] For others, see p. 110.

SOME INSCRIPTIONS FROM LEPCIS MAGNA

(a) *An inscription from Lepcis Magna in the British Museum.* (Pl. XX, 1).

In 1816 the Bey of Tripoli presented to the Prince Regent a cargo of antiquities from Lepcis Magna. They were brought to England in 1817, and, after a sojourn in the courtyard of the British Museum, went to Virginia Water with material from other sources, to be disposed in a sham ruin.[1] One inscribed stone was subsequently returned to the British Museum.[2] Its findspot is certain, for it was seen *c.* 1806 at Lepcis Magna by J. D. Delaporte, among the remains of a building since identified as, possibly, the Temple of Jupiter Dolichenus.[3]

It is a block of the grey limestone typical of public building at Lepcis in the first and early second centuries A.D., part of an entablature, with mouldings above and below, a socket for a roofbeam at the back, and a monumental inscription on the face.[4] Previous publications of the text are incomplete.[5] There are two lines of Latin, followed by one in neo-Punic. The Latin text reads:

. . . VESPASIAN]I F DOM[ITIAN. . . (erased)
. . .] AVG SVFE[. . .

The neo-Punic text is translated by Professor Giorgio Levi Della Vida as '. . . provided] for the work the *Mēqīm Ēlīm* [. . .' .[6]

Throughout the first century A.D. Lepcis retained its Punic constitution, with two annually elected sufetes as chief magistrates.[7] One of these sufetes is recorded here. The preceding title was probably *flamen Augusti* rather than *augur*; there were *flamines Augusti* in Lepcis already in 8 B.C.,[8] whereas augurs are not attested before the second century, and were probably features of the colonial constitution. The *Mēqīm Ēlīm* were priests, and are recorded here only at Lepcis.

The line of neo-Punic was presumably a translation of the Latin; and it is interesting to find a bilingual public inscription at a date that is only about twenty years before Trajan gave Roman citizenship and colonial status to the Lepcitanians.[9] Professor Giacomo Caputo has recently published another bilingual Domitianic text, dated in 92, from the theatre of Lepcis.[10] In Domitian's time it seems that there were a number of

[1] Information kindly given by Messrs. G. E. Chambers and I. Colquhoun, who are preparing a history of the antiquities at Virginia Water.

[2] Republished here by courtesy of the Trustees of the British Museum.

[3] *Journal Asiatique*, April 1836, p. 315. The temple is a Severan construction; but the block was doubtless brought here in late antiquity, cf. one block of *IRT* (see note 4) 370, brought from the Forum Vetus, perhaps in the sixth century.

[4] See pl. XX, I; measurements, width 0·67× ht. 0·53× surviving depth 0·51. The text is no. 349a in the forthcoming volume of *Inscriptions of Roman Tripolitania*, hereafter cited as *IRT*.

[5] *CIL* VIII, 7, with bibliography.

[6] *Libya* (già *Rivista della Tripolitania*), III (1927–8) p. 92.

[7] In fact until it became a Roman colony, *c.* 109; see *IRT* 412.

[8] R. G. Goodchild, *Papers of the British School at Rome*, XVIII (1950) p. 72 ff.

[9] *c.* A.D. 109–110, see *IRT* 353.

[10] *Dioniso*, XII (1949) p. 83 ff. =*IRT* 318; for the neo-Punic text see G. Levi Della Vida, *Rendiconti dell'Accademia dei Lincei*, series VIII, vol. IV (1949) p. 404.

people who still preferred neo-Punic to Latin. We may compare the private monument commissioned by a Neronian sufete and inscribed in neo-Punic only;[11] and, a century and a half later, the sister of the emperor Severus spoke only halting Latin.[12] There was evidently a strong tradition of cultural conservatism among the wealthy local families.

This makes it the more remarkable that Trajan did not apply at Lepcis the traditional policy of promotion by stages, but raised the community directly from native to colonial status.[13] Possibly he was influenced by the learning of a few men like the Septimius Severus for whom Statius wrote.[14] More probably he did not care that the manners of these new citizens were often far from those of Italy. This would not seem to be an impossible attitude for the emperor who advanced the Moor, Lusius Quietus,[15] and in whose time there appears to have been an unprecedented intake of men from the Eastern provinces into the Senate and the Equestrian Order.[16]

It is patent from the building programme undertaken there in the Flavian period, to which this text is an additional witness, that Lepcis had become very prosperous.[17] This with its adequate, if Punic, civic tradition, and its willingness to accept a minimum of the outward forms of Roman civilisation,[18] must have been Trajan's justification.

It is sometimes suggested that the other two cities of Tripolitania, Oea and Sabratha, became Roman colonies at the same time as Lepcis.[19] If this were so, Trajan's policy would be still more remarkable; for there is no reason to believe them less tenacious of Punic customs than Lepcis, and they were certainly less prosperous, and less advanced in the outward forms of Romanisation. But the suggestion is probably misleading. At Oea the earliest evidence for colonial status is the existence of *duoviri* in *c.* 164;[20] and at Sabratha it may well be that the grant was made by Antoninus Pius. Two of the curiae at Sabratha are named Faustina and Hadriana,[21] just as, at Lepcis, Trajan and his family were honoured by the curial names.[22]

(b) *The Office of the Quattuor Publica Africae at Lepcis Magna.* (Pl. XX, 2).

The existence of an office of the IIII p. A. at Lepcis Magna has been known since 1811, from a monument that was dedicated to Fulvia Plautilla in A.D. 201 by its

[11] G. Levi Della Vida, *Africa Italiana*, VI (1935) p. 27 ff.

[12] *SHA*, *Vit. Sev.*, 15. In view of the similar case recorded at Oea in the mid-second century by Apuleius, *Apol.* 98, this cannot be dismissed as malicious gossip. Before the Flavian period, only two Lepcitanian families are directly attested to have had Roman citizenship. Under Domitian, however, there was a change: all prominent persons known to us were Roman citizens; and there was a marked tendency to imitate Roman and Italian institutions, e.g., *ordo et populus* and the *latus clavus* in *IRT* 318.

[13] See *IRT* 412, a municipal career which bridges the change. Lepcis may have been a *civitas libera* in the first century (M. Grant, *Imperium to Auctoritas*, p. 340).

[14] Statius, *Silvae*, IV, 5.

[15] PW XIII, col. 1874.

[16] For the Senate, see P. Lambrechts, *Antiquité Classique*, 1936, p. 105 ff. Of 60 equestrian procurators known to the writer to have served under Trajan, 17 are demonstrably provincials, 11 of them from the Eastern provinces and 2 from Africa. Of 52 who served under the Flavian emperors, 11 are demonstrably provincials, 4 of them from the Eastern provinces and none from Africa.

[17] Ten building inscriptions of Flavian date have been found at Lepcis: *IRT* 300, 342, 343, 344, 345, 346, 348, 349, 349a, 350.

[18] See note 12.

[19] E.g., T. R. S. Broughton, *Romanisation of Africa Proconsularis*, p. 132.

[20] *IRT* 232. The quaestor at Oea mentioned by Apuleius, *Apol.* 101, is not necessarily evidence that there was an Italian-type constitution there at this time; *AE* 1916, no. 42, from Volubilis, seems to show that junior officers in Punic cities were sometimes known by a Latin title appropriate to their functions, rather than by a transliteration of their Punic titles.

[21] *IRT* 120, 121. The other recorded curial names at Sabratha are derived from the names of divinities.

[22] *IRT* 391, 411, 413, 414, 416, 417, 421, 436, 541.

procurator and familia.[23] Two inscriptions that have been discovered at Lepcis more recently reveal something of its organisation in the early second century.

The first, found in 1950, records an imperial slave as vilicus in the office:

NVM VENERIS ADQVISITRICIS AVG SACRVM IVCVNDVS AVG N VERNA VEGTIGALIS IIII P A VIL LEPCIS MAG TERRESTRIS D S P.[24]

The second, first published in 1925, has only been understood in the light of the first:

. . . ME]RCVRIO [. . .]IMVS TRAIANI AVG SER PRISCILLANVS VIL MARIT ET XX HERED LEPC[IS] MAGN D D.[25]

It appears that, when the first of these texts was cut, the office was divided into sections supervised by imperial slaves. The title of one of these, 'vilicus terrestris', implies also a 'vilicus maritimus'; and it is a fair inference that the vilicus maritimus of the second text, whose duties are not further specified, was in fact an officer of the IIII p. A. The office, then, was established at Lepcis with this organisation in the time of Trajan.

S. J. De Laet has argued that the IIII p. A. were four taxes farmed together—the portorium, with, probably, the XXV venalium mancipiorum, XX libertatis and XX hereditatium.[26] The second of the texts given here is the only known reference to the African administration of any of these three. De Laet, who read with *AE* 'vil. marm. et XX hered.',[27] took it to indicate that Trajan temporarily separated the four taxes. This hypothesis can now be seen to be unnecessary. With the correct reading, 'marit.', it may be held rather to strengthen his case for their conjunction, since it directly associates an officer of the IIII p. A. with one of them.

The titles of the vilici suggest that both were customs officers.[28] The presence at Lepcis of an officer for land-borne, as well as one for sea-borne, traffic is natural enough; the city was probably the most convenient station for collection of the frontier levy on goods entering the province from the desert in this area. De Laet's view of the IIII p. A. implies, and the second text seems to confirm, that there were other sections of the Lepcis office to deal with other taxes; but there is no further evidence of them.

The two texts are both of the second century and both almost certainly later than the creation of the colony of Lepcis, *c.* 109.[29] The second must have been cut between that date and 117; so that Priscillanus had charge of the section for the XX hereditatium

[23] *ILS* 8918 = *IRT* 432.

[24] Published by Prof. Giacomo Caputo in *Fasti Archeologici*, IV, 1949, no. 3985 = *IRT* 315a. I have to thank Prof. Caputo for his kind permission to use the text. Four other dedications to Venus, made by officers of the IIII p. A. at Bisica (*ILS* 1654), Cuicul (*AE* 1925, no. 73), Mactar (*CIL* VIII, 23404) and Thuburbo Maius (*AE* 1923, no. 22), suggest that she was regarded as a patroness of the revenue in Africa.

[25] *IRT* 302; see pl. XX, 2. Prof. Pietro Romanelli, who first published the text in *Leptis Magna*, p. 134, read 'Marii' for 'marit': Cagnat and Besnier, in *AE* 1926, no. 164, proposed 'marm(orum)'. It will be clear from the plate that 'marm' is not a possible reading; but the stone is badly water-worn, and it is difficult at this point to distinguish between the letters I and T.

[26] *Portorium*, p. 247 ff.

[27] See note 25.

[28] Compare the division of portoria in the Lex Antonia de Termessibus, *ILS* 38: *portoreis terrestribus maritumeisque*. A vilicus of the same rank as these at Lepcis is found in the office of the IIII p. A. at Cuicul (*AE* 1925, no. 73), but there is no similar specification of duty.

[29] For this date, see *IRT* 353. In both the texts under discussion Lepcis has the adjective Magna, which seems to be a title of the colony. It is used by Pliny (*HN* V, 27) to distinguish the city from that of Leptis in Byzacena; but it is not found in local first-century epigraphy, whereas 'colonia Lepcis Magna' is in regular local use in the second century.

at a time when its work was increasing in importance, as a result of the extension of Roman citizenship in Lepcis.

By the time of Severus, conductores, whose staff was supervised by imperial slaves, seem to have given place to imperial procurators in the administration of the IIII p. A.[30] This would doubtless entail some reorganisation of local offices, and perhaps accounts for the procurator and familia at Lepcis in the early third century.[31] An unpublished inscription from Lepcis may give another officer of the new service:

DEO INVICTO SARAPIDI MARO AVG LIB COMM DONVM POSVIT [32]

It is cut in Rustic capitals on an altar of yellow-brown limestone, and was found in the Forum Severianum. Lettering, material and findspot, point to a date in the early third century for this monument.

J. M. Reynolds

[30] M. I. Rostoftzeff, *Geschichte der römischen Staatspacht*, p. 402.

[31] See note 23.

[32] *IRT* 309.

LIBRI FVLGVRALES *

LIGHTNING was not always regarded as just a meteorological phenomenon: it strongly inspired religious imagination and caused cult observations before science had its word, and even after that. Its history was treated in a masterly fashion by Usener (1905), and there is no need to return to it, especially after O. Gilbert's survey of the scientific lore (1907) and A. B. Cook's substantial and learned supplements and illustrations to Usener (1925).[1] They neglected, however, the Etruscan *libri fulgurales* which, although depending on both religion and science, are not concerned with either in general but with divination. Here too the ground is well prepared, and three men deserve particular mention, K. O. Müller, the pioneer, Thulin for his indispensable monograph, and W. Kroll for an observation about the historical background. Müller (1828) and Thulin (1906) discussed the evidence under four headings, consultation, procuration, repulsion, and conjuration, Müller in a short and selective narrative, Thulin exhaustively; and many valuable observations and interpretations were made by both.[2] Thulin bravely faced all difficulties and contradictions but rather presented the case than decided it: there is no thesis at the beginning and no conclusion at the end. In addition, he did not appreciate sufficiently the problem of origins. This problem did not exist in Müller's day and was not really acute when Thulin wrote. He knew and quoted many Eastern parallels by way of illustration but explained their existence by the Eastern origin of the Etruscans, which is a hypothesis and not an explanation and fails at any rate whenever the doctrine in question is of a recent date. Kroll's contribution is little more than an *obiter dictum*. His book *Die Kosmologie des Plinius* (1930) broke new ground with regard to Hellenistic cosmologists who combined Babylonian religious traditions with Greek science.[3] He was not concerned with the Etruscans at all but, observing that what is ascribed by Pliny to the Etruscans, is in fact at some points closely related to Chaldaean doctrines, he concluded that an Etruscan writer (e.g. Caecina) must have given under Chaldaean influence an unwarranted version of the native doctrine. The observation is illuminating, but I cannot agree with the conclusion and suspect that Kroll would not have drawn it had he been called upon to deal with more than a small piece of evidence. The evidence as a whole suggests that it was not just one writer but the *haruspices* them-

* The completion of this article (cf. *JRS.* 36, 1946, 117, n. 91) was long delayed by urgent work in other fields. I am indebted to Mr. Hugh Last and Professor A. D. Nock, who read the article and improved it at many difficult points, and to the Craven Committee and the Jowett Copyright Trustees for generous financial aid. I must apologise for the use of the plural 'lightnings': it cannot be avoided, as the substitute 'kinds of lightning' would not always be correct and, if too often repeated, would become tiresome.

[1] Usener, 'Keraunos', *Rhein. Mus.* 60, 1905, 1 ff. (= *Kl. Schr.* 4, 471 ff.); O. Gilbert, *Die meteorol. Theorien des griech. Altertums* 619 ff.; Cook, *Zeus* 2, 1–47; 501–829 (of this 505–704 on the double axes); 3, 1114 ff.; cf. also P. Jacobsthal, *Der Blitz in der oriental. u. griech. Kunst* 1906; Blinkenberg, *The Thunderweapon in Religion and Folklore* 1911; Furlani, *Studi Etruschi* 5, 1931, 203 ff.; Nilsson, *Gesch. d. griech. Rel.* 1, 63 ff.

[2] K. O. Müller, *Die Etrusker*[2] 2, 166–180; Thulin, *Die etr. Disciplin* 1, 1–128; id. *RE.* 7, 2441 ff.; cf. G. Schmeisser, *Quaestionum de Etrusca disciplina particula* (Breslau 1872), 21 ff.; Pettazzoni, *Studi e materiali* 4, 1928, 213 ff.; K. Holl, *Die Naturales Quaestiones des Philosophen Seneca*, *Diss. Berlin* 1935, 48 ff. (depends entirely on Thulin); C. Clemen, *Die Religion d. Etrusker* 1936, 14 ff. is a confused 'Literaturbericht'.

[3] Cf. further Kroll's article 'Plinius u. die Chaldäer', *Herm.* 65, 1930, 1 ff. and Bidez' valuable survey 'Les écoles chaldéennes sous Alexander et les Séleucides', *Mélanges Capart* 1935, 41–89.

selves who had changed their minds. In early centuries, when called to Rome to explain some portents, they were not required to justify their findings. But in hellenised Rome no Roman and no stranger could discuss the heavenly signs in ignorance of, say, Aristotelean meteorology, of the Stoic-Epicurean debates about divination and determinism, and so on. The *haruspices* could easily satisfy such demands because their country was not less hellenised than Rome and because they always aimed to be up to date. So too the Etruscan writers of the first century B.C. were men of considerable learning, equals in their subjects of Cicero and Varro. A fundamental difference, however, divided the *haruspices* and their theorists from the Romans: whereas the Greek spirit made the Romans receptive to a secular culture for its own sake, it influenced the Etruscans only so far as it helped them to improve and modernise their sacred books; and because the Greeks, for good reasons, could not satisfy them fully they turned to the writings of hellenised Orientals.

There are three coherent texts: Pliny 2, 138–144; Seneca, *NQ.* 2, 39–51 and Lydus, *de ost.* 43–52, and many important fragments elsewhere, especially in Cicero (*de divinatione*), Festus and Servius. In order not to lose our way in the maze of contradictory fragments we shall closely follow Pliny's argument, which is the most valuable of all, relating to it the other texts; and at the end will be three sections, 10–12, based on Seneca only.

(138) Tuscorum litterae novem deos emittere fulmina existimant, eaque esse undecim generum; Iovem enim trina iaculari. Romani duo tantum ex iis servavere, diurna attribuentes Iovi, nocturna Summano, rariora sane eadem de causa frigidioris caeli. Etruria erumpere terra quoque arbitratur, quae infera appellat, brumali tempore facta saeva maxime et exsecrabilia, cum sint omnia, quae terrena existimant, non illa generalia, nec a sideribus venientia, sed ex proxima atque turbidiore natura. argumentum evidens, quod omnia superiora e caelo decidentia obliquos habent ictus, haec autem, quae vocant terrena, rectos. (139) et quae ex propiore materia cadunt, ideo creduntur e terra exire, quoniam ex repulsu nulla vestigia edunt, cum sit illa ratio non inferi ictus, sed adversi. a Saturni ea sidere proficisci subtilius ista consectati putant, sicut cremantia a Martis, qualiter cum Volsinii, oppidum Tuscorum opulentissimum, totum concrematum est fulmine. vocant et familiaria in totam vitam fatidica, quae prima fiunt familiam suam cuique indepto. ceterum existimant non ultra decem annos portendere privata, praeterquam aut primo patrimonio facta aut natali die, publica non ultra tricesimum annum, praeterquam in deductione oppidi. (140) Exstat annalium memoria sacris quibusdam et precationibus vel cogi fulmina vel impetrari. vetus fama Etruriae est, impetratum Volsinios urbem depopulatis agris subeunte monstro, quod vocavere Oltam, evocatum a Porsina suo rege. et ante eum a Numa saepius hoc factitatum in primo annalium suorum tradidit L. Piso, gravis auctor, quod imitatum parum rite Tullum Hostilium ictum fulmine. lucosque et aras et sacra habemus interque Statores ac Tonantes et Feretrios Elicium quoque accepimus Iovem. (141) varia in hoc vitae sententia et pro cuiusque animo. imperare naturae sacra audacis est credere, nec minus hebetis beneficiis abrogare vires, quando in fulgurum quoque interpretatione eo profecit scientia, ut ventura alia finito die praecinat et an peremptura sint factum aut prius alia facta quae lateant, innumerabilibus in utroque publicis privatisque experimentis. quam ob rem sint istâ ut rerum naturae libuit, alias certa alias dubia, aliis probata aliis damnanda : nos de cetero quae sunt in his memorabilia non omittemus. (142) . . . laeva prospera existimantur, quoniam laeva parte mundi ortus est. nec tam adventus spectatur quam reditus, sive ab ictu resilit ignis sive opere confecto aut igne consumpto spiritus remeat. (143) in sedecim partes caelum in eo spectu divisere Tusci. prima est a septemtrionibus ad aequinoctialem exortum, secunda ad meridiem, tertia ad aequinoctialem occasum, quarta obtinet quod est reliquum ab occasu ad septemtriones. has iterum in quaternas divisere partes, ex quibus octo ab exortu sinistras, totidem e contrario appellavere dextras. ex iis maxime dirae quae septemtriones ab occasu attingunt. itaque plurimum refert unde venerint fulmina et quo concesserint. optimum est in exortivas redire partes. (144) ideo cum a prima caeli parte venerint et in eandem concesserint, summa felicitas portendetur,

quale Sullae dictatori ostentum datum accepimus. cetera ad ipsius mundi portionem minus prospera aut dira. quaedam fulgura enuntiare non putant fas nec audire, praeterquam si hospiti indicentur aut parenti. magna huius observationis vanitas tacta Iunonis aede deprehensa est Scauro consule, qui mox princeps fuit.

Pliny begins with the nine gods who send eleven kinds of lightnings, describes what is called by some terrestrial and infernal (138) but is according to others of sidereal origin, and instances for its power the destruction of Volsinii. He suddenly turns to the prognostics and the possibility of delaying their effect (139). This leads to the question how lightning can be produced by man, to the instances of Porsina, Numa, and Tullus Hostilius (140) and to some philosophical criticism and sweeping assertions (141). Scientific observations follow (142) and then again religious matter, the system of the sixteen regions (143 f.).

1. *The Sources.* (*a*) In general, as far as divination is based on meteorological observation and classification the ultimate source is Aristotle's *Meteorology*. The relation between the scientific and divinatory aspects was a favourite topic in the Epicurean–Stoic debates, and Posidonius himself took part in them in his meteorological works as well as in his περὶ μαντικῆς, where he also considered the Etruscans.[4] (*b*) We are led to Posidonius from the opposite direction as well. Seneca, Pliny, and Lydus have one feature in common, which is that the special Etruscan chapters are inserted in a narrative consisting of scientific, geographical, and paradoxical details: as common source for this framework Posidonius' Compendium of Meteorology has been suggested.[5] (*c*) There must have been some special studies devoted to lightning. Two authors are known to us by name, Hermon of Delos and Polles of Aigai.[6] The latter is the more important because he was probably the principal source of Lydus on Etruscan matter (cf. *de ost.* 2, p. 6, 25 W.) and wrote not only περὶ κεραυνῶν καὶ τῆς αὐτῶν παρατηρήσεως but also περὶ τῆς παρὰ Τυρρηνοῖς μαντικῆς. Their dates are not known; but even if they were later than Seneca and Pliny they no doubt inherited and continued a much older tradition. (*d*) Pliny mentions in the index Caecina, Tarquitius (Priscus) and Iulius Aquila as his special authorities to whom we must add, of course, Varro. Of these Iulius Aquila is unknown except as source of Pliny, together with Tarquitius and Umbricius Melior, on extispicy in Book 11 ('qui de Etrusca disciplina scripsit'), no doubt an Etruscan;[7] Tarquitius Priscus lived in the first half of the first century B.C. and was the chief propagator in Rome of the Etruscan discipline, especially of the *libri Tagetici*, some of which he translated into Latin. Caecina is the best known of the three: a friend of Cicero and source of Seneca. It seems certain that Pliny knew Tarquitius Priscus and Iulius Aquila only through Varro but may, like Seneca, have used Caecina directly. (*e*) Seneca whose *Naturales Quaestiones* may have been known to Pliny, quotes two authors by name: Caecina (39; 49) and Attalus (48, 2; 50). The latter was one of his teachers, a Stoic, 'qui Etruscorum disciplinam Graeca subtilitate miscuerat' (with the result that his system is the least profitable). Another teacher of his, Papirius Fabianus, a pupil of Q. Sextius, is quoted elsewhere (3, 27, 3); it seems a fair conjecture that his *Causae naturales* (Αἰτίαι φυσικαί)

[4] Diog. Laert. 7, 149; Cic. *de div.* 1, 72; 91 etc.; cf. Reinhardt, *Kosmos u. Sympathie* 222 ff.

[5] Capelle, *Hermes* 40, 1905, 623; Reinhardt, *Poseidonios* 106.

[6] Hermon: Porph. *Il.* 2, 370 (p. 39, 7 Schr.); cf. 10, 274 (p. 154, 23 Schr.). Polles: Suid. s.v.; Marin. *v. Procli* 10; Lyd. *de ost.* 8; Nonn. *in Greg. Naz.* 72 (*Patr. Gr.* 36, 1024).

[7] Cf. W. Schulze, *Lat. Eigennamen* 371, 1.

not only inspired Seneca to write on the same subject but also treated the Etruscans in the same manner. Seneca quotes Varro just once and in another context but is certainly not less in his debt than Pliny. (*f*) One important writer is missing in this survey, Nigidius Figulus, who is probably the ultimate source of Lydus; his share cannot be defined without a discussion of Lydus and must be left therefore to section 7 (below, p. 138). Concluding, we may say that the number of special works must have been much larger than we can trace, and that they were influential in Rome in the first part of the first century B.C.; the protest of Lucretius against the 'Tyrrhena carmina' (6, 381) reflects the strong interest which his contemporaries took in Etruscan matters.

2. *The Nine Gods and the Eleven Lightnings.* The first sentence is part of a good but complicated tradition, which may gain clarity by a synopsis.

Pliny 2, 138	*Seneca, NQ.* 2, 41, 1	*Arnobius* 3, 38	*Servius (et Dan.), Aen.* 1, 42
Tuscorum litterae novem deos emittere fulmina existimant, eaque esse undecim generum; Iovem enim trina iaculari.	(Etrusci) fulmina a Iove dicunt mitti et tres illi manubias dant (cod. E) (fulmina dicunt a Iove mitti et tres manubias dant Δ: fulmina novem dicunt mitti et tres illi manubias dant Φ)	(Novensiles) . . . deos novem Manilius, quibus solis Iuppiter potestatem iaciendi sui permiserit fulminis . . ., pronuntiat.	(*a*) cum Varro divinarum‹ . . .›novem diis fulmina adsignet, inter quos et Minervae . . . (*b*) antiqui Iovis solius putaverunt esse fulmen, nec id unum esse, ut testantur Etrusci libri de fulguratura, in quibus duodecim genera fulminum scripta sunt, ita ut est Iovis, Iunonis, Minervae, sic quoque aliorum . . . (*c*) in libris Etruscorum lectum est iactus fulminum manubias dici et certa esse numina possidentium fulminum iactus, ut Iovem, Vulcanum, Minervam . . .

First a word about the sources. Pliny just speaks of the 'Tuscorum litterae' but depends, as we have seen above, on Varro and perhaps on Caecina. Seneca's source is Caecina who is mentioned in the preceding chapter. Manilius is probably the antiquarian of the Sullan period,[8] known to Arnobius through Varro whom he quotes in the same sentence. Servius first quotes Varro's 'Antiquitates rerum divinarum,' then the 'Etrusci libri de fulguratura' and again the 'libri Etruscorum' which means no doubt the same.[9] Thus this piece of evidence depends on good tradition in which the share of Varro is greater than first appears.

Next we must introduce the term 'manubia' which is found in a few more passages (one will be discussed below, p. 133). It may be a Latinised Etruscan word: if so, it is idle to speculate about its exact meaning. If not, the derivation[10] from *manus* and *habere* offers itself and should perhaps suggest the lightning as a weapon in the hand of the divinity which is so often represented in art. This is just possible; what seems out of the question is to connect it with the other, and more frequent, *manubiae*, meaning 'booty'.

In Seneca the version of our best MS., the cod. E, deserves preference and is accepted by the editors; the version of the group Δ need not detain us, but that of Φ is curious because it contains 'novem'. Nevertheless this version would make sense only if we substituted *Iovi* for *illi*: the difference from Pliny would then be limited to nine gods on the one side and nine lightnings on the other, and this would be the more important because (as will be contended below, p. 133, n. 56; p. 135, n. 68) Pliny 138 f. and Seneca

[8] Cf. Teuffel-Kroll 1[6], §158, 1; Münzer, *RE.* 14, 1115, no. 4; 1159, no. 28.

[9] Two further titles may be added. Cic. *div.* 1, 72 and Amm. Marc. 23, 5, 13 quote the *libri fulgurales*, and Serv. *Aen.* 6, 72 'libri . . . Begoes nymphae, quae artem scripserat fulguritarum' (*fulguratorum* coni. Schmeisser). But also less precise quotations, such as *Etrusci libri*, *libri fatales*, etc. (cf. Thulin 1, 1 ff.) may refer to such works.

[10] Walde-Hofmann 1, 631; cf. Specht, *Zeitschr. f. vergl. Sprachf.* 65, 1938, 192.

41–7 follow an ultimately common source.[11] However this may be, one thing is certain—that Seneca and Pliny agree at least concerning the three *manubiae* of Iuppiter; Seneca gives important details about them which will be discussed below (p. 127).

As to Manilius, the problem of the *di Novensides* does not enter here except that Piso, according to Arnobius, identified them with the nine gods at Trebia in Sabinum, Granius and Aelius Stilo with the nine Muses, and that Varro spoke in this context of the special significance of the number nine. All this does not lead us far, because only Manilius speaks of the gods of the lightning. What we should expect to find is that these nine gods of Pliny and Manilius represent either regions in the heavens or divisions of time, comparable to the seven planetary gods of the weekdays (and hours) and to the twelve gods of the zodiac and of the months, the *di Consentes*: but time and space in the sky are nowhere divided into nine parts.

The first Servius passage is made above to confirm this tradition. In fact, the MSS. contain: '. . . Varro divinarum quinto quattuor diis,' etc.; *novem* instead of *quinto quattuor* (that is V and IIII) is a persuasive conjecture by Schmeisser (mentioned by Thilo, but ignored by the Harvard editors), and the gap which is marked in the synopsis is for the lost book-number of the *Antiquitates*. It will be safe to discount the names of the gods in this Servius passage as well as in the other two: they may be an arbitrary addition caused by the particular situation in the *Aeneid*.[12] The second Servius passage contains the number twelve which we must set against the eleven of the other tradition.

Thulin was, I think, right in explaining the eleven kinds of Pliny by the old Babylonian division of the zodiac into eleven signs,[13] i.e. when Scorpio also comprised the constellation (the 'Claws', Χηλαί, of Scorpio) that was later called Libra. The eleven signs still occur on Tarentine discs of the fourth century B.C.[14] and in Plato's *Phaedrus* (246 e); astronomers, like Eudoxus, Aratus, and Hipparchus, reckon with eleven signs (Libra, Ζυγός, is first mentioned about 237 B.C.),[15] and Vergil, in the prooemium of the *Georgics* (1, 33), assigns the place of the twelfth sign to Octavian, which shows that the old system was even then sufficiently known to be used as a means of poetical flattery.[16] We cannot say to whom the Etruscans owed their eleven signs, to the Babylonians or Greeks. At any rate, the second Servius passage with its twelve lightnings can be explained as being based on the later zodiac with its twelve signs, which is also represented by the twelve *di Consentes* (below, pp. 127 f.). That these signs, especially in conjunction with the Sun, bring about a change not only in the season, weather, agriculture, etc., but also in all human activities, is a basic doctrine of astrology on which e.g. the astrological calendars rest. Consequently if the Etruscans ascribed a particular power to the lightnings of the eleven or twelve signs they just made a

[11] Münzer, *Beitr. z. Quellenkritik d. Plinius* 244 was sceptical about the common source; more positive Kroll, *Hermes* 65, 1930, 8, 3; id. *Kosmologie d. Plinius* 38.

[12] They are by no means in the way of our argument as they all can be identified with 'zodiacal' gods. That this was their function emerges in addition to the above argument also from Serv. *Aen.* 11, 259; Thulin's (1, 32 ff.) list of the nine gods cannot be correct because there is no principle which holds it together.

[13] Cf. Serv. *Georg.* 1, 33; Thulin 1, 48; F. X. Kugler, *Sternkunde u. Sterndienst in Babel* 2, 2, 2, 467; Boll-Bezold, *Sternglaube u. Sterndeutung*[3] 7. Bezold 13 further refers to the evil giant Tiamat of the Gilgamesh poem who had 11 companions; cf. also Joseph's dream about Sun, Moon and the 11 stars (father, mother and his brothers) worshipping him, *LXX Gen.* 37, 9. I cannot explain the number 11 in Aristoph. *Equ.* 546; Telecleid., *CAF.* 44 K. (=Plut. *Per.* 3); *Schol. Apoll. Rhod.* 1, 1129 (in the latter a probable conjecture of Wendel's eliminates it).

[14] Cf. Kerényi, *Arch. Rel. Wiss.* 30, 1933, 271 ff.; Wuilleumier, *Tarente* 544 ff.; Boyancé, *RÉA.* 44, 1942, 191 ff.

[15] Cf. Ptol. *Synt. math.* 9, 7, 2 (p. 267, 13 Heib.); Boll, *Sphaera* 186; id. *Myth. Lex.* 6, 964.

[16] Cf. Kroll, *Wochenschr. f. klass. Philol.* 1918, 305; Bayet, *RÉL.* 17, 1939, 141 ff.

variation of this doctrine and also produced corresponding fulgural calendars (see below, pp. 138 ff.).

3. *Iuppiter and his Advisers.* Pliny leaves the three *manubiae* of Iuppiter without sufficient clarification, but Seneca adds important details about them and is largely confirmed by Festus p. 129 M. (114 L.). In the preceding chapter Seneca was discussing the tripartite system of Caecina (see below, pp. 147 ff.) and now he argues that Caecina must mean, not three kinds (*genera*), but three significations because the three kinds are those of the scientific observation: 'quod terebrat, quod discutit, quod urit'. He divides the last group into two ('aut urit aut fuscat'), each with a subdivision: 'tribus modis urit: aut afflat . . . aut comburit aut accendit'; and the second he subdivides according to as the lightning changes, or does not change, the colour of the object; if the former, the colour can be blue, black or pale. He then turns again to the Etruscans (41) and says that the philosophers and the Etruscans agree 'thus far'; the latter differ only by ascribing the lightning to Iuppiter and giving him three *manubiae* (see below). Seneca's narrative could lead to the conclusion that Caecina set against the scientific explanation of the Greeks the divinatory one of the Etruscans. The parallel passage in Festus shows that in fact the Etruscans accepted the scientific explanation but put it into the service of their divination.

We must therefore combine the three classes of this chapter with the three of the following. The first *manubia* (as Seneca explains it in the following chapter) is sent by Iuppiter alone and is mild: we must add that this is identical with the first class mentioned above, the perforating lightning. The second, sent by Iuppiter on advice of the twelve *di Consentes*, which is harmful even if it does some good occasionally, is identical with the second class, the crushing lightning. The third, which is sent by Iuppiter on advice of the *di superiores et involuti* and destroys and changes the state of public and private affairs, is the third class, the burning lightning.

There is more in this doctrine than the tripartite system of Greek meteorology. We shall return to the first *manubia* later (below, p. 133) when further evidence becomes available; the second and third attest a divine hierarchy and its consultation, and these require immediate attention. The twelve gods of the second *manubia* are the *di Consentes* mentioned by St. Augustine (*CD.* 4, 23 . . . 'deos Consentes, quos dicunt [i.e. Varro and others] in consilium Iovis adhiberi . . .')[17] and above all by Arnobius 3, 40: quoting Varro, he defines the Penates as the unknown and numberless gods who dwell in the innermost part (*penetralia*) of the heavens, adding that the Etruscans call these *Consentes* and *Complices* because they rise and set together, six male and six female,[18] with unknown names and little sense of pity, and yet they are the advisers and companions of Iuppiter.[19] This narrative cannot be right as it stands, but it can be corrected by the assumption that the unknown, numberless, and pitiless Penates refer to the *di superiores et involuti* of the third *manubia* (see below, p. 129) and only the rest to the gods of the second. The twice six gods, rising and setting together, are the twelve gods of the zodiacal signs and of the months, identified probably by Eudoxus and Plato with

[17] Cf. also Mart. Cap. 1, 41 f.; 45; 9, 914.

[18] It is not clear why these pairs were formed; cf. the Egyptian doctrine which ascribed to the four elements twice four divinities, male and female: Sen. *NQ.* 3, 12, 2 (13); Iambl. *myst.* 8, 3.

[19] Thulin (1, 30, with reference to earlier discussions) is certainly wrong in preferring *principes* (whom he identifies with the *di superiores*) of the MS. to Scaliger's *participes*: for *consiliarios et participes* serve no other purpose than to explain the names *Consentes* and *Complices* respectively.

the old δώδεκα θεοί who were worshipped in Athens since 522-1 B.C., and in Rome since 217 B.C.[20] For the Etruscans they were more than that: they were not just *con-sentes* but also *con-sentientes* and as such the advisers of Iuppiter in sending his lightning. Boll found that the Chaldaeans and Egyptians too had such divine advisers, the βουλαῖοι θεοί:[21] those of the former number 30 for the days of the month, those of the latter are again the twelve zodiacal gods. There are other traces of this doctrine, although the term 'advisers' does not occur again. Twenty-four stars were called by the Chaldaeans the δικασταὶ τῶν ὅλων, half of them situated to the north, the other half to the south of the zodiac and stand for the 24 hours of the day,[22] perhaps identical in concept with the 24 πρεσβύτεροι of the Apocalypse (4, 4) who are seated on their thrones around God. Again, the Hermetic tradition[23] knows the 36 decans as the φύλακες ἀκριβεῖς καὶ ἐπίσκοποι τοῦ παντός, who have the power to punish by destroying kingdoms and cities, by sending hunger and pestilence, and so on. This is a curious piece of astral lore[24] which subjects the various terms of time, the hours, days, ten-day-periods, months and years, to the rule of divine patrons, identified either with certain stars and constellations or with the gods whose power is manifested by those stars, and led to the compilation of solar, lunar, and also fulgural, calendars. Those divine patrons supervise human activities, report about them to the supreme god, and dispense reward and punishment. The lore is probably Chaldaean in origin and, as the Prologue of Plautus' *Rudens* shows traces of it,[25] already existed in the fourth century B.C., which is the time of Diphilus. Even the special feature of the Etruscan doctrine that identifies the vehicle of divine judgement with the lightning is found in two Eastern fragments. One is contained in Pliny 2, 82 (see below, p. 134) and comes from Berossus or his school which, while supporting the planetary origin of the lightning by a scientific simile, asserts that the lightning has its share in the divine regime because it carries a message from the gods. The other is found in a place where one would scarcely look for it, in the Book of Enoch. This work of the second century B.C. contains some 'astronomical' chapters[26] which reflect the cosmic system of the Chaldaeans rather than that of the O.T.; they form a foreign body within the book interpolated either by the author or someone else. Our passage is (others will be quoted below, pp. 134 f.) 59, 1: 'In those days I saw the secrets of the lightnings and the judgements they execute: and they lighten for a blessing or a curse as the Lord of the Spirits willeth.' The Etruscans may have received the idea of divine judgement earlier than the date of the two Eastern fragments would suggest and have changed it when new developments in the astral lore made changes necessary. There is no analogy to the tripartite system, divinatory and scientific, into which the Etruscans fitted the second *manubia* of the *di Consentes*: we shall have to explain its genesis by other methods.

[20] Cf. Weinreich, *Myth. Lex.* 6, 820 ff.; Bidez, *Éos ou Platon et l'Orient* 62; M. Crosby, *Hesperia, Suppl.* 8, 1949, 82 ff.

[21] Diod. 2, 30, 6; *Schol. Apoll. Rhod.* 4, 262; Boll, *Sphaera* 476 ff.; Kroll, *Hermes* 65, 1930, 13; Bidez, l.c. 53.

[22] Diod. 2, 31, 4; cf. Quint. Smyrn. 2, 595; Ioh. Gaz. 1, 314 ff.; Boll ap. Sethe, *Nachr. Gött. Ges.* 1920, 98, 3.

[23] Stob. 1, 191 W.; cf. W. Scott, *Hermetica* 1, 414; Bidez, *Mél. Capart* 1935, 53. A similar role is ascribed in the Hermetic *Definitiones Asclepii* 10 (p. 235 Nock-Festugière) to the demons who live and mediate between heaven and earth and punish the impious with storm, lightning, earthquake, pestilence and war; cf. Reitzenstein, *Poimandres* 352; Bousset, *Arch. Rel. Wiss.* 18, 1915, 157, 1; Festugière's notes, p. 239 f.

[24] For a detailed discussion and references see *JHS.* 69, 1949, 66 ff.

[25] Cf. Bidez, l.c. 53.

[26] All I can find about these chapters is a brief reference to Pliny 2, 79; 81 by Bousset, *Religion des Judentums*[3] 498, which shows, however, that he would have placed them in their proper historical setting. The quotations above are from Charles' translation, *The Apocrypha and Pseudepigrapha of the O.T.* 2, 188 ff.

The third *manubia* is sent by Iuppiter on advice of the *di superiores et involuti* and is destructive. There is no further evidence about these gods, so that we depend on conjecture.[27] The term 'superiores' may point to the Platonic system (*Symp.* 202d, which had a strong influence on the theology of Hellenism) of two divine spheres, the higher, the aethereal, occupied by the gods proper, the lower, the air, by the demons, the messengers between gods and men. If the *di superiores* are these gods of the higher sphere, the other conjecture (above, p. 127), suggesting that they are also identical with the Penates of Arnobius, who are in the innermost part of the heavens, would offer and receive some support. But there is a difficulty: the Penates, that is the Etruscan gods thought to be the equivalents of the Roman Penates, are unknown by individual names and are numberless, a qualification which we must accept even though Nigidius Figulus and Caesius knew of some identifications,[28] just as the Roman Penates were identified with some gods. The Platonic system, however, meant by the gods of the higher sphere the 'Olympians', well known and in a sense numerable. I cannot eliminate this contradiction and must nevertheless accept this evidence as it is because it also occurs elsewhere.[29] Thus, the identity of these gods remains obscure. As to their 'destructive' and 'pitiless' character, I suggest that it is not the outcome of theological speculations but of the scientific classifications discussed above: it is an inference from the burning lightning that the gods sending it are destructive. Equally it is then not the zodiacal gods of the second *manubia* who are harmful in the first place but the crushing lightning of the scientific system.

The doctrine of the three *manubiae* thus consists of (i) Etruscan elements, represented by Iuppiter and his two divine councils; (ii) Greek scientific classifications; and (iii) the belief in the sidereal origin of the lightnings. This latter element requires some clarification, the more so as it will soon reappear in another form. It is not, like the other two, an outcome of speculations but rests on popular belief. There is much Babylonian evidence, and Greek as well. Etymology and usage show that the relation between stars and lightnings was strongly felt. Ἀστράπη-(ἀ)στερόπη come from ἀστήρ; ἀστράπτω means both 'throw light' and 'hurl lightning'; Zeus is ἀστεροπητής (*Il.* 1, 580), Mithras ἀστροβρόντης (*IG.* 14, 998); 'star-flung thunderbolt' must be the meaning of the mysterious ἀστεροβλὴς κεραυνός on an 'Orphic' tablet[30] (frg. 32c K.; ἀστεροπής: 32d; e), in origin no doubt identical with ἀστροβλής, ἀστρόβλητος although this only means 'sun-scorched, -stricken' (*sideratus, sidere ictus*) but see διοβλής, διόβλητος 'hurled by Zeus' and ἀστερόπληκτος (Sen. *NQ.* 1, 15) 'lightning-stricken.'

4. *The Creative and Destructive Lightning.* It will be recalled that this digression was caused by the fact that the details about the three *manubiae* of Iuppiter had to be supplemented from Seneca and others, as Pliny does not seem to discuss them. He just says that the Romans kept only two of the eleven, ascribing the lightning of the day to Iuppiter, that of the night to Summanus.[31] This is an interpolation by Pliny or someone

[27] Cf. the learned but not convincing argument in Thulin 1, 28 ff. (*JRS.* 36, 1946, 109, n. 46).

[28] Arnob. 3, 40 (=Nig. Fig. frg. 68 Sw.); cf. Thulin 3, 58.

[29] Mart. Cap. 1, 41; cf. Lact. Plac. *Stat. Theb.* 4, 516.

[30] Cf. e.g. Kerényi, *Arch. Rel. Wiss.* 26, 1928, 322 ff.; H. W. Thomas, Ἐπέκεινα, Diss. München 1938, 135, n. 141; Ziegler, *RE.* 18, 1, 1389.—On Sun and lightning see Melito, frg. 8 (E. J. Goodspeed, *Die ältesten Apologeten* 311) ὡς, ἂν πλησίον ὀφθῇ, δέκα ἀκτινοβόλοις ἀστραπαῖς καταφλέξαι τὴν γῆν . . . πεπυρωμένος ὡς ἀστραπῇ, Nock *Harv. Theol. Rev.* 27, 1934, 65.

[31] Milo (according to Stob. 1, 238 W.) ascribed the lightning of the day to the sun, that of the night to the stars. If this is a parallel it is not further helpful because we know nothing about Milo and his date.

before him and irrelevant for our subject. The *infera fulmina* follow. These break out from the earth in winter, are most violent and as fearful as anything terrestrial because they come from the nearest and most troubled matter and not, as others, from the stars. Pliny adds scientific explanation ('argumentum-adversi') which may be omitted in this context. He then complicates his argument by referring to some writers who ascribe the 'terrestrial' lightning to the planet of Saturn and the burning to that of Mars which once burnt down Volsinii (§ 138 f.).

This argument rests on three different classifications: (a) *superiora, terrena, infera;* (b) *generalia* or *a sideribus venientia, ex proxima natura venientia;* (c) planetary origin: destructive from Saturn, burning from Mars. An attempt must be made to bring order into this confusion.

(*a*) This is in itself a clear and popular threefold division according to location or distance. The second and third somehow correspond in Caecina's long list (Sen. 2, 49, 2 f.) to the *atterranea* 'quae in cluso fiunt' and to the *inferna* 'cum e terra exilivit ignis', but this correspondence is not further helpful: Caecina and Seneca are more elementary, limiting themselves to a catalogue, whereas Pliny's context is highly speculative. Pliny gets into difficulties by contracting the second and third class: he calls them once *terrena*, then *infera*, says first that they break out from the earth and then that they come from above, though from a near source. This is one problem. The other is: what does he mean by arguing that this lightning is more harmful than the sidereal because it comes from a nearer and more unsettled matter? It seems that Pliny and his Etruscans had in mind the doctrine according to which lightning and volcanic fire were identical phenomena;[32] but this doctrine could serve in this context only to confirm the basic doctrine and could not fully account for the contradictory references to above and below. The contradiction is solved, I think, if we interpret this passage in the sense of a cosmic system developed from Platonic beginnings by Hellenistic theology and also by the Etruscans in the system of their sixteen regions (below, p. 145). It starts with the highest sphere in the aether, passes to that of the Sun, then of the Moon, of the air, and finally of the earth. It places the dead not under the earth, as was done earlier, but in the lowest sphere, in the air, especially in the west. At the same time, the old conception survived, and the contamination of the two explains the uncertainty in Pliny's terminology. And the second problem can be solved in the same way. The west, the seat of the underworld, is the sphere of the air which has not got the purity of the aethereal or solar spheres,[33] and that is why its lightning must consist of a more unsettled, earthy, matter.

(*b*) This same contrast ought to be expressed by the second classification which is just incidentally inserted: '. . . non illa generalia, nec a sideribus venientia, sed ex proxima atque turbidiore natura'. And if the source is on the one hand the sphere of the stars, on the other our neighbourhood, the idea is logically further developed. But what are the 'general' lightnings? The answer is found, I believe, in the discussion of the cosmic winds, 2, 116, which are created by the motion of the universe and the contrary motion of the planets; this wind is either the generative spirit of nature ('ille generabilis

[32] Cf. e.g. Sen. *NQ.* 2, 26, 4; 30, 1; *Aetna* 345; 363; also in Greek poetry, cf. Aesch. *Prom.* 1080 ff.; Wilamowitz, *Glaube d. Hell.* 1, 216.

[33] Cf. e.g. Serv. *Aen.* 6, 593 '"Fumea lumina" id est terrena; nam aetherius ignis caret fumo, solo enim splendore viget.'

rerum naturae spiritus') or is the air struck by the planets, or else starts from the stars nearer than the planets or from the fixed stars ('sive a suis sideribus exeunt his propioribus sive ab illis caelo adfixis cadunt'). There is no need to say here more about the difficult system of the cosmic winds[34] than that there is not only verbal but material affinity between the two passages: wind and lightning were occasionally considered related phenomena.[35] In other words, if it is the creative wind which comes from the stars, it must then be a similar sort of lightning which comes from the same source: we have to change therefore in our passage *generalia*[36] into *generabilia*.[37] We gain by this the creative lightning from above in contrast to the destructive from below, the latter occurring in winter which is the period of decay in nature.

Our next task is to place this doctrine somewhere in history. This history begins with Heraclitus, who said that lightning governs the all (frg. 64 D. τὰ δὲ πάντα οἰακίζει κεραυνός) which is, as most of his aphorisms, difficult to understand: 'lightning' seems to stand for the fire as the divine principle that creates and destroys. His successors, the Stoics, used his idea to develop the system of two fires, the destructive terrestrial and the creative heavenly fire, above all of the Sun, Zeno frg. 120 A.: . . . δύο γὰρ γένη πυρός, τό μὲν ἄτεχνον καὶ μετάβαλλον εἰς ἑαυτὸ τὴν τροφήν, τὸ δὲ τεχνικόν, αὐξητικόν τε καὶ τηρητικόν. Cleanthes frg. 504 A. (Cic. *n.d.* 2, 41) 'hic noster ignis . . . confector et consumptor omnium idemque quocumque invasit cuncta disturbat ac dissipat; contra ille corporeus vitalis et salutaris omnia conservat, alit, auget, sustinet sensuque afficit'.[38] This creative fire is the principal source of the divine πνεῦμα and of the σπερματικοὶ λόγοι which pervade the world. But despite Heraclitus and Cleanthes, who in the Hymn on Zeus (frg. 537, 9 A.) compared the creative fire with the lightning, the analogy is not complete: in both cases lightning has only the function of a religious or poetical image. And this verdict may be applied to the whole Greek world: for the Greeks lightning was not the creative element or instrument. It is Eastern tradition that supplies what is missing in Greece. There is a Zoroastrian fragment,[39] preserved by Dio Chrysostom, which is, even in its wording, curiously reminiscent of Pliny. Zeus creates the world not with the unruly, unclean lightning which appears in winter but with the clean one, not mixed with dark matter. This parallel places the common source of Pliny's Etruscan and of Dio Chrysostom's Zoroastrian doctrine in Asia Minor and further in the East, in the homeland of the cult of fire.[40] The ultimate author would not be just a Stoic, but an Oriental who knew not only Greek philosophy but also cosmology and divination of the East. This tradition is preserved (and developed in a different direction) in the so-

[34] Cf. Kroll, 'Plinius u. die Chaldäer', *Herm.* 65, 1930, 1 f.

[35] Cf. O. Gilbert, *Die meteorologischen Theorien* 620 ff.; Kroll. *Die Kosmologie des Plinius* 37.

[36] *Generalis* could be defended if it were the opposite of *specialis*: it is so applied to the winds, Plin. 2, 130, cf. Ampel. 5, 1, 2; to the Genius, Mart. Cap. 2, 152. Further, in divination it can be one of five classes of dreams, *proprium*, *alienum*, *commune*, *publicum*, *generale*, Macrob. *Somn.* 1, 3, 11, and then refers to the universe in contrast to the individual and other possible groupings of human society. Our case is different, so that we either accept it as a vague term or emend it.

[37] It is a synonym of *genitalis* and a translation of the Greek γόνιμος and σπερματικός. It first occurs in Manil. 1, 143, but in view of its occurrence in our passage and in Isidor (12, 6, 64; 12, 7, 81) it is reasonable to suggest that it was coined by Varro. Its meaning as required by our passage is well defined in *Corp. Herm. Ascl.* 14 'quaecumque ergo sunt quibus inest natura generandi, haec et generabilia sunt de quibus nasci potest.'

[38] Cf. Boyancé, *Études sur le Songe de Scipion* 1936, 67 f.; Pohlenz, *Herm.* 75, 1940, 119.

[39] Frg. O 8 B.–C. = Dio Chrys. *or* 36, 56; cf. Cumont's note ad loc.; Nock, *JRS.* 30, 1940, 197. In view of the analogy in Pliny I cannot believe that the passage is a forgery of Dio or anyone else; how far it is really Zoroastrian is another question.

[40] Cf. S. Wikander, *Feuerpriester in Kleinasien u. Iran* 1946, 52 ff.

called Chaldaean Oracles, compiled in Asia Minor about the middle of the second century A.D. They identified the fire with the paternal νοῦς, the source of all terrestrial life.[41] But besides this creative fire, they laid strong emphasis on the ἀμείλικτοι κεραυνοί which do harm.[42] These are part of a hierarchy of seven lightnings which we know only from a Neoplatonic (and therefore for our purpose irrelevant) interpretation,[43] created perhaps on the analogy of the seven rays of the Sun (ἑπτακτις Ἥλιος).[44] It is worth adding, in view of our further discussion, that the servant of this cult, the priest or magician, by prayer or magical action can force these fiery demons into his service.[45]

The original authors of this doctrine did not create it out of nothing nor did the Stoics and Etruscans accept it without good reasons. The idea of the divine descent of men which it implies was widespread and old.[46] It found its mythical expression in the god's association with mortal women; it was often symbolically expressed, the god's place being taken by a star, a spark from the Sun, a lightning, or a snake or phallus found at the hearth of the house (which does not necessarily imply phallic cult) or even a spark from the fire.[47] This symbolism could be weakened to a portent when, as at the birth of Mithridates,[48] a star was said to be rising or, as in the case of Alexander[49] or the child of the Fourth Eclogue (v. 50), the birth was accompanied by cosmic signs, lightning, thunder, earthquake: originally these were no doubt the vehicle of the divine sperma. And what concerns us is that such miraculous conception was also reported by the Etruscans and Romans about Servius Tullius, Romulus, Caeculus.[50] Thus the *haruspices*, when borrowing from the East the idea of the creative lightning, did not borrow something that was new to them; it was new only in the philosophical and systematical sense as it served to make a contrast with the destructive lightning.

(*c*) Ignoring the scientific observations and most of the preceding argument, Pliny quotes some authors who ascribed the destructive (terrestrial) lightning to the planet of Saturn which in fact is at the greatest distance from the earth (although Saturn as king of the underworld is the nearest) and the burning to that of Mars, illustrating the latter with the fate of Volsinii. This explanation presents us with a two-fold problem, the planetary origin of lightning in general, and the harmful nature of Saturn and Mars in particular. We begin with the latter which leads to the doctrine of the good and evil planets, Serv. *Georg.* 1, 335 'sciendum autem . . . de planetis quinque (i.e. not counting, as often, Sun and Moon) duos esse noxios, Martem et Saturnum, duos bonos, Iovem et Venerem; Mercurius vero talis est, qualis ille cui iungitur'. This is a much-repeated astrological doctrine which Ptolemy in his chapter περὶ ἀγαθοποιῶν καὶ κακοποιῶν

[41] Cf. Psell. (*Patr. Gr.* 122), 1145a; Procl. *Tim.* 1, 420 D.; Kroll, *De oraculis Chaldaicis* 15; 19; id. *Rhein. Mus.* 50, 1895, 636; Theiler, *Die chald. Orakel u. die Hymnen des Synesios* 1942, 33; Cumont, *Lux Perpetua* 361 ff.

[42] Procl. *Cratyl.* p. 58 P.; id. *Theol. Platon.* 265, 3 P.; Kroll 20.

[43] Michael Italicus, Cramer, *Anecd. Oxon.* 3, 182; cf. Damasc. *princ.* 265 f. (2, p. 131 R.); Bidez, *Catal. alchim. gr.* 6. 163.

[44] Theiler, o.c. 35, 6; Dodds, *JRS* 37, 1947, 56, 19.

[45] Cf. Kroll, *Rhein. Mus.* 50, 1895, 638.

[46] Cf. e.g. Wilamowitz, *Eurip. Herakles* 52 ff.; Bieler, ΘΕΙΟΣ ΑΝΗΡ 1, 134 ff.

[47] Cf. Conon. *narr.* 33 (Branchos); Plut. *Alex.* 2 (Alexander); Suet. *Aug.* 94, 4 (Augustus); Philostr. *v. Apoll. Tyan.* 1, 5; Norden, *Die Geburt des Kindes* 158 f.; Radermacher, *Arch. Rel. Wiss.* 25, 1927, 216 ff.; Kerényi, *ibid.* 26, 1928, 322 ff.

[48] Iustin. 37, 2, 1; cf. Fotheringham, *Notices of the Royal Astron. Soc.* 79, 1919, 162 ff.

[49] Ps.-Callisth. 1, 12, p. 13 Kr.; but see the dream of Olympias (Plut. *Alex.* 2) ἔδοξε βροντῆς γενομένης ἐμπεσεῖν αὐτῆς τῇ γαστρὶ κεραυνόν, cf. the horoscope attributed to him as the child to be born under the second decan of the Aquarius who ἐκ θεῶν σπαρήσεται and will be κοσμοκράτωρ (Heph. Theb. 1, 1, p. 65, 17 Eng.).

[50] Pliny 36, 204; Dion. Hal. 4, 2; Plut. *Rom.* 2; Serv. *Aen.* 7, 678; Eitrem, *Symb. Osl.* 11, 1932, 19, 1.

(*Tetrab.* 1, 5) ascribes to the παλαιοί, i.e. the Chaldaeans;[51] and he justifies it by distributing the four humours among the four planets: warm and moist belong to Iuppiter and Venus, which are therefore generative and active as they mix and make everything grow; cold and dry to Saturn and Mars, which are destructive and passive as they divide and destroy.[52] This doctrine of the harmful planets must be much older than Hellenism. Because of its reddish colour Mars was brought into relation with the fire in Babylon already, and for centuries was called in Greece Πυρόεις.[53] It seems that Epigenes (see below, p. 134) contributed a great deal to the later form of the doctrine.[54] As often, we are tempted to say that all this cannot be Etruscan; but the instance of Volsinii forces us to reverse our verdict. If we knew the date of the destruction of Volsinii,[55] it would provide us with a convenient *terminus post quem* for the source of Pliny and his Etruscan, though not necessarily for the Etruscan version of the doctrine itself.

5. *The Lightnings of the Three Planets.* In retrospect it is not difficult to discover that our chapter does not refer just to two planetary lightnings, those of Saturn and Mars, but to three, the third being the creative lightning to be ascribed to Iuppiter. Secondly, these three are supposed to correspond to the other three of the scientific system, the perforating, the crushing, and the burning lightnings. Thirdly, we have seen above, p. 127, that Seneca (that is Caecina) knew of another correspondence between the scientific and religious systems which related the three *manubiae* of Iuppiter to the three scientific kinds and made them instruments of astral councils to decide the fate of men. If it was said above (p. 129) that Pliny does not appear to comment (as does Seneca) on the three *manubiae*, this appearance can now be corrected: his comment is contained in the doctrine about the planetary lightnings.[56]

A strange piece of evidence finds its explanation in this context: Ps.-Acro, *Hor. c.* 1, 2, 1 'omnes manubiae albae et nigrae pallida coruscatione esse dicuntur, Iovis rubra et sanguinea'. Apparently Ps.-Acro did not understand what he said; O. Keller, his editor, tried to change the text, and Thulin just registered the facts without explaining them.[57] One could think of the colouring caused by lightning (see above, p. 127), but this would lead nowhere. I suggest that the colour of the lightning depends on its planetary source: Saturn is traditionally called pale or black, Iuppiter white, Mars red.[58] If this is so, Ps.-Acro must have made a mistake in ascribing the red colour to Iuppiter's *manubia* and is corrected not only by the astrologers but by Serv. Dan. *Aen.* 8, 429 '. . . cum autem (dicit) "rutili tris ignis", Martem (intelligit)', thus referring to the red-coloured lightning sent by Mars. The 'black' lightning too is mentioned, though without direct reference to Saturn.[59] We conclude that three planets can send lightnings, Saturn, Iuppiter, Mars; the crushing, creative, and burning lightnings; their colour can

[51] Cf. Plut. *Is.* 48; Sext. *astrol.* 29; Callicrates (otherwise unknown) seems to have treated this doctrine in greater detail: *CCAG.* 8, 3, 102 f.; Macrob. *Somn.* 1, 19, 20; Sallust. *de diis* 9.

[52] Partly similar Philolaos A 14 D. (Procl. *Eucl.* p. 130, 8 Fr.); for a Pythagorean explanation given by Ptolemy see Macrob. *Somn.* 1, 19, 26.

[53] Cumont, *Ant. Class.* 4, 1935, 19 ff.

[54] *Schol. Apoll. Rhod.* 3, 1377.

[55] Müller's dating to 93 B.C. (*Etr.* 2², 169) rests on his conjecture that Obs. 52 (112) refers to the same event, which seems to me unjustified.

[56] In so far it was right to say that they follow a common source; but the qualification must now be added that they chose from it two different religious explanations for the same phenomenon. This qualification would force us to abandon the idea of a common source if there were not more to be said in its favour (below, p. 135, n. 68).

[57] Thulin 1, 51 f.

[58] The evidence is collected by Boll, 'Antike Beobachtungen farbiger Sterne', *Abh. Akad. München* 30, 1918, 19 ff.

[59] Stat. *Silv.* 1, 4, 64 'ne fulminis atri sit metus'; Sil. 4, 431 'tum fulminis atri spargentem flammas'; Thulin 1, 51.

be black, white, or red; they are called *manubiae*. Where does this doctrine come from, and what is its date?

There is a short paragraph about lightning in Pliny 2, 82, strangely inserted among the chapters about the planets. It may be summarised as follows: (1) According to the 'principes doctrinae viri', lightning is produced by the three upper planets (Saturn, Iuppiter, Mars). (2) This is modified by the qualification that lightning is created in the second of those planetary spheres, in that of Iuppiter, through the mixture of moist matter descending from the sphere of Saturn with hot matter ascending from that of Mars, and that is why it is said that it is Iuppiter who sends the lightning. (3) Lightning springs from the planets like sparks of charcoal from a burning torch and brings a divine message to earth, which proves that it has its share in the divine regime.

This paragraph is called in the index, not very appropriately, 'quare fulmina Iovi adsignentur'. I first thought that it was just the anticipation of the Etruscan doctrine; but the surrounding chapters are all of Chaldaean origin, and § 191 shows that this text is no exception: 'Babyloniorum placita et motus terrae . . . siderum vi existimant fieri, sed illorum trium, quibus fulmina adsignant . . .' For the last words obviously refer to the argument of § 82, and Schnabel, who attributed the second passage to Berossus (frg. 38),[60] should not have omitted the first. The version of Epigenes,[61] a pupil of the Chaldaeans, probably of Berossus, is in principle the same, in detail different: Saturn produces in conjunction with the Sun and Moon thunder and flash (*fulgur*) and, if joined also by Mars, lightning (*fulmen*). Here as there the planetary origin of the lightning is assumed: Saturn and Mars are contributing the necessary substance. The difference from Berossus is that Iuppiter is omitted in favour of Saturn as the principal deity, which points to a certain school of thought.[62] A third witness, Apollonius of Myndus,[63] speaks of three classes of comets: one is red without light, the other is of white and pure light, the third, with flame and much smoky heat, can be menacing and announce bloodshed. The inference from the last words is that the other two comets too announce events though of a different character. This passage refers neither to the planets nor to the lightnings, but is nevertheless an important witness. For the three colours are again the conventional colours of the three upper planets, and on the other hand for divination comets and lightnings are related phenomena. Another seemingly irrelevant passage becomes important in this context. Pliny 37, 135 mentions in his list of precious stones the *ceraunia* of which according to Sotacus there were not one but three kinds, white, black, and red. Needless to say, these are the same three planetary colours, and they must have been connected with the three lightnings before Sotacus connected them with his three kinds of stones.[64] Finally, Enoch, 43, 1: 'And I saw other lightnings and the stars of heaven, and I saw how He called them all by their names and they hearkened unto Him. And I saw how they are weighed in a righteous balance according to their proportions of light: (I saw) the width of their spaces and the day of their appearing, and how their revolution produces lightning . . .'

[60] Cf. Kroll, *Hermes* 65, 1930, 9 f.; Bidez, *Mél. Capart* 1935, 51.

[61] Sen. *NQ.* 7, 4, 1 ff.; cf. Schnabel, *Berossos* 111; Kerényi, *Arch. Rel. Wiss.* 26, 1928, 327 f.; Röhr, *Philol.* 83, 1928, 272; Bidez, l.c. 83 f.

[62] Cf. Diod. 2, 30, 3 and the other passages quoted in *JRS.* 36, 1946, 121, n. 120.

[63] Sen. *NQ.* 7, 17, 1; Boll, *Sphaera* 368; Bidez, l.c. 80.

[64] Sotacus, incidentally one of the earliest writers to mention Britain, is known only as the author of a work περὶ λίθων and as one of the sources of Pliny on this subject. Our context would make him a hellenized Oriental, roughly contemporary of Berossus and Sudines, but not earlier.

This is, visionary setting and biblical language apart, a scientific description of the planets, distinguished by names, different in size, light, and time of their revolution; an identification of light and lightning, implying the planetary origin of the latter. Another equally relevant interpretation follows immediately, 44: 'Also another phenomenon I saw in regard to the lightnings: how some of the stars arise and become lightnings and cannot part with their new form.' This is perhaps a more specified theory, pointing to the identity of shooting stars, comets, and lightnings, all sprung from the planets like—to use the image of the Chaldaeans[65] in Pliny (see above, p. 134)—a spark of charcoal from a burning torch. And to make the agreement more complete we must refer once more to the assertion of Enoch and Pliny that the lightnings bring divine message and judgement, and a similar statement of Apollonius of Myndus about the comets.

The first question as to the origin of the Etruscan doctrine is thus answered—with Berossus and his school. The answer to the second question concerning its date is implied herein: it cannot be earlier than the beginning of the third century B.C. This dating can be confirmed by an independent consideration. Both doctrines, the Chaldaean and Etruscan, require that Saturn, Iuppiter, and Mars, in this order, are the upper planets; but then there are two possibilities. Mars may be called hot and fiery because of the neighbourhood of the Sun, whence it receives its fire. If so, Berossus and the Etruscans would depend on the 'Chaldaean' order of the planets (complete with Venus, Mercury, Moon), which is arranged in accordance with the distance of the planets from the earth and their time of revolution.[66] In this case we could move its date back to Berossus and his school—at present the earliest evidence belongs to the end of the third century, the time of Archimedes. If, however, Mars' fiery character depends on its reddish colour (which was so explained in ancient Babylonia already) and not on the nearness of the Sun, then the order would be that adopted by Plato and the Pythagoreans, which differs from that of the Chaldaeans only in that it separates the Sun and Moon from the other planets. In either case the *terminus post quem* as given above receives additional support.

The planetary doctrine offered new opportunities to the *haruspices*. They were able to identify the source of the lightning on account of its effect, mild, crushing, burning, or if there was no effect, on account of its colour, black, white, red. And in forming their prognostics they were then able to draw from all the speculations about the planets which the astrologers had produced.

6. *The Horoscopes*. Returning to the narrative in Pliny, we meet a new classification. There is the family lightning which is the first to occur after a man had taken over the rule in the house:[67] this and the lightning of the birthday are fateful for a whole life. Private lightning has no effect beyond ten years, with the exception of the two categories just mentioned; a public lightning not beyond thirty years, except if it occurs at the foundation of a city (§ 139).[68] Seneca treats the same matter in c. 47. He speaks of a

[65] They in turn borrowed it from Greek philosophy, see Diels, *Doxogr.* 343; Achill. p. 50, 32 M. shows that this doctrine later became more elaborate.

[66] Cf. Boll, *RE.* 7, 2561 ff.; Boyancé, *Études sur le Songe de Scipion* 60 ff.; Bidez–Cumont, *Les Mages hellénisés* 1, 110.

[67] It was observed by Kroll, *Kosmologie d. Plinius* 88 that 'quae prima fiunt familiam suam cuique indepto' is identical with 'primo patrimonio facta' (see also Sen. 2, 47 'prima accepto patrimonio'): that is why I have contracted the narrative. In the second Pliny passage I would prefer 'prima patrimonio facto . . .' unless 'primo patrimonio' means, in analogy to 'prima iuventute', 'soon after taking possession of the patrimony'.

[68] The change from the origin and quality of the lightning to its various functions on earth is abrupt, and

tripartite system: *fulmina perpetua, finita,* and *prorogativa.* The *perpetua* last for a lifetime and begin with the birth or patrimony or with the foundation of a city; the *finita* answer questions of the day; the *prorogativa* contain a menace which can be delayed but not averted: delayed for ten years if they are *privata,* for thirty if *publica.* The Etruscans thus held: (*a*) that there were private and public lightnings affecting either the present or a limited period or the whole life of an individual or a community; (*b*) they spoke either of the validity or of the delay of a prediction or of both.

(*a*) It is quite common in Greek and Roman religion to distinguish between the public and private sphere, in cult as well as in divination. There was, for instance, a great variety of *auspicia privata,* animal and meteorological, which directed the activities of the individual.[69] They differ, however, from those of the Etruscans, first in that they are elementary as they advise a man to do, or not to do, something, and secondly in that the explanations are often improvised and certainly do not form a system. In our passages on the other hand we have met the signs concerning birth, and entering a property; in Seneca there are scattered instances of predicting death, inheritance, office (consulate), exile (49, 1), journey (50, 3), fire, deception by relatives, treachery of slaves (39, 3). The Etruscans could not have proposed to answer such varied questions if an elaborate doctrine had not furnished them with the necessary details, the astrology of the East. In other words, the doctrine of lightning closely follows at this point what we call horoscopes. Seneca states this function of the lightning in the sweeping manner of the astrologers in an earlier passage, 32, 1, by claiming that it reveals not just this or that event but 'longorum fatorum sequentium ordinem', and that it does so much more clearly than if it had been given in writing. This close relation of fulgural and astral divination throws light on the strange connection of birth and patrimony if we assume that they correspond to the celebration of the birthday and of the accession of the Persian kings (Her. 1, 133, 1; 9, 110, 2; cf. Plat. *Alcib.* i. 121 c). The celebration of the birthday needs no comment; that of the accession survived in the ceremonial of the Diadochi and in the institution of the *dies imperii* in Rome, beginning with Octavian's sacrifice on January 7, 43 B.C., 'primo potestatis suae die' (Pliny 11, 190).[70] This assumption may be justified by the development of divination. Babylonian divination was concerned with the fate of a country, city, king, or statesman only, and it was the astrologers of Hellenism who began to cast individual horoscopes.[71] Accommodating the traditional lore to a bourgeois society, they apparently applied to patrimony (that is to its Greek equivalent) what formerly referred to accession. This close relation between

one is inclined to blame Pliny for omitting some important matter which would bridge the gap between the two subjects. An examination of Seneca leads to the opposite view. It will be recalled that Seneca 2, 41 treats the three *manubiae* as does Pliny, although they differ in their illustration of detail. The chapters 42–46 serve to show that the Etruscan doctrine is in perfect harmony with the Stoic view about Iuppiter; they do not contain new evidence but argue about the old and are obviously contributed by Seneca himself. But c. 47 resumes the comment on the Etruscan doctrine with exactly the same matter as we find in Pliny. This is the strongest argument in favour of a related or common source (see above, p. 125 f.), and the abrupt change must then be attributed to this source, not to Pliny.

[69] Cf. Wissowa, *Religion*[2] 386 f.

[70] The evidence is collected by Kornemann, *Klio* 7, 1907, 285, 1 and W. Schmidt, *Geburtstag im Altertum* 75 ff. For instance, the decree of Canopus, *OGIS.* 56, gives the birthday of Ptolemy III Euergetes and the day ἐν ᾗ παρέλαβεν τὴν βασιλείαν (cf. the inscription of Rosetta, *OGIS.* 90, about Ptolemy V Epiphanes παραλαβόντος τὴν βασιλείαν παρὰ τοῦ πατρός); the inscription of Antiochus I of Commagene, *OGIS.* 363, 84, mentions together the physical (σώματος) birthday and that of the accession (διαδήματος); it is also relevant that a comet was observed at Mithridates' birth and accession (Iustin. 37, 2, 1), and that Lachesis spun at Nero's accession (Sen. *Apocoloc.* 4, 1). On the dies imperii see Mommsen, *StR.* 2[3], 813; 841; W. F. Snyder, *Yale Class. Stud.* 7, 1940, 231 ff.

[71] Cf. Kroll, *RE.* 17, 208.

the Etruscans and the East leads also to a chronological conclusion which is not less important: at least half of our passage concerns individual prognostication and is therefore provided with a *terminus post quem* by Hellenistic astrology. One essential point deserves further consideration: the way for individual horoscopes was prepared for centuries by divinatory calendars, also in Etruria. We shall turn to them after concluding the discussion of our passage.

(*b*) There is a difference between Pliny and Seneca: the former maintains that the effect of the private lightning, with the above exceptions, does not last longer than ten years, and that of the public longer than thirty years; the latter defines the *prorogativa fulmina* thus: 'quorum minae differri possunt, averti tollique non possunt', and mentions for this delay the ten and thirty years respectively. Who is right? The argument centres around the problem of fate, which was an old, eternal topic.[72] Homer had said that no man can avoid his fate (*Il.* 6, 488), and the Delphic Oracle added that not even the gods can escape it (Herod. 1, 91, 1). The debate was carried on by philosophers, Heraclitus (frg. 105 D.), Plato (*Gorg.* 512e); but it seems that a theory was not made of it before the Stoics, particularly Chrysippus, who opened the long series of works *de fato* (frg. 912–1007 A.). The impulse and urgency came—as was observed long since[73]—from the emergence of astral fatalism in the world of Hellenism. The logical position of the *haruspices*, like that of the astrologers, must have been that what the lightning announces is final. But like the Magi and the followers of the Chaldaean Oracles,[74] the *libri Acherontici* ascribed to Tages declared that fate can somehow be delayed and that the delay can be granted first by Iuppiter and then by Fate itself.[75] The last words are strange, and seem to point to some philosophical argument about the relation between Zeus and Heimarmene,[76] but are not of further interest for our subject. Why the decadic rule was established I do not know.[77] It is also attested by Cicero, *Cat.* 3, 9: 'Lentulum . . . dixisse fatalem hunc esse annum (63 B.C.) ad interitum huius urbis atque imperii, qui esset annus decimus post virginum absolutionem, post Capitolii autem incensionem vicesimus.' The means of delay was prayers and sacrifices performed by, or on the advice of, the *haruspices*. It was, and often remained, their original business in Rome to provide an absolute remedy, see e.g. Gell. 1, 7, 10 (= Val. Ant. frg. 59 P.): 'si eae res divinae factae recteque perlitatae essent, haruspices dixerunt

[72] Cf. e.g. Reitzenstein, *Poimandres* 102 ff.; Gundel, *RE.* 7, 2622 ff.; Cumont, *Rel. orient.*[4] 289, n. 58 ff.; id. *Lux Perpetua* 303 ff.

[73] Cumont, *Astrology and Religion* 28; 68 ff.; cf. Manil. 4, 14 'fata regunt orbem, certa stant omnia lege'; Diog. Laert. 7, 149 (on Zeno, Chrysippus, Posidonius); Vett. Val. 5, 9; Euseb. *pr. ev.* 6, 3, 3.

[74] Lact. *div. inst.* 2, 15, 6; Zoroastr. frg. O 99 B.-C.; Porph. ap. Euseb. *pr. ev.* 6, 4, 2; Nemes. 36; Lyd. *de mens.* 2, 10 (Kroll, *De oraculis Chaldaicis* 59); Apul. *Met.* 11, 6; *Isidis aretalogia Cymaea* (ap. Peek, *Isishymnos v. Andros* 122); *Pap. Berol.* 10525, 10 (Abt, *Arch. Rel. Wiss.* 18, 1915, 258); Iambl. *myst.* 8, 6; above all Arnob. 2, 29; 33; 62 (Festugière, *Mémorial Lagrange* 1940, 97 ff.); Cumont, *Relig. orient.*[4] 290, 65; 291, 73; H. Jonas, *Gnosis* 1, 204.

[75] See on *Aen.* 8, 398 '"nec pater omnipotens" notandum quod hic Iovem a fatis separat, cum alibi iungat . . . sed hanc imminentium malorum dilationem Etrusci libri primo loco a Iove dicunt posse impetrari, post a fatis . . .' Servius 'sciendum secundum aruspicinae libros et sacra Acheruntia, quae Tages composuisse dicitur, fata decem annis quadam ratione differri . . .; nam fata differuntur tantum, numquam penitus immutantur'; cf. 7, 315; Lact. Plac. *Stat. Theb.* 4, 677; Thulin 1, 81; 3, 57 f.; Cumont, *Lux Perpetua* 61.

[76] It is known that the belief in absolute determinism was not shared by all Stoics, Aet. 1, 28, 4 (*Doxogr.* 324) Ποσειδώνιος τρίτην ἀπὸ Διός· πρῶτον μὲν γὰρ εἶναι τὸν Δία, δεύτερον δὲ τὴν φύσιν, τρίτον δὲ τὴν Εἱμαρμένην. Cic. *div.* 1, 125 'quocirca primum mihi videtur, ut Posidonius facit, a deo . . . deinde a fato, deinde a natura vis omnis divinandi ratioque repetenda'. What exactly Posidonius meant is not quite clear except that he placed Zeus above Fate in all matters concerning divination. Is it possible that the Etruscans took notice of this philosophical grading between Zeus and Fate and made, with a slight change, a religious rule of it?

[77] Epimenides delayed the Persian war, Diotima a pestilence, by ten years: Plat. *legg.* 642d; *Symp.* 201d; Clem. Alex. *Strom.* 6, 3, 31, 4; Lobeck, *Aglaoph.* 315r.

omnia ex sententia processurum (sic) esse' (cf. Cic. *de div.* 2, 24). Between this position and that recorded by Pliny and Seneca lay philosophical debates, with the Etruscans taking sides in them. As to our initial question we conclude that Seneca's version must be the correct one and that Pliny's is due, if not to a misunderstanding, to secondary systematisation.

7. *The Calendars.* It was mentioned above (p. 137) that horoscope-casting was preceded by prognostication through calendars. These calendars, especially the Lunaria,[78] were much used in ancient Babylonia, and in Greek tradition are best known from the fragments in Hesiod's Ἡμέραι: the boy born, for instance, on the 6th of the month would be fond of lies and treacherous words; one born on the 20th would become a wise man, and so on. There were complete calendars of this kind (cf. Herod. 2, 82) which advised what should be done or avoided on every day of the month concerning agriculture, breeding of animals, and any other activities of life. Our concern is the fulgural calendar preserved by Lydus (*de ostentis* c. 47–52, p. 101–107 W.) together with other meteorological calendars and Lunaria.[79] Such calendars are frequent in Greek astrological MSS., which proves their great popularity. Many of them are, as shown by Boll and Bezold, *l.c.*, in a striking agreement with Babylonian cuneiform texts—a fact which proves their long life and great constancy.

The text περὶ κεραυνῶν is anonymous and is wrongly ascribed by Wachsmuth (*Proleg.* p. xxx) to Cornelius Labeo. It is divided into doxographical matter (43–6)[80] and prognostics (47–52). Leaving aside the former, we quote an instance from the latter. If the lightning occurs when the Sun is in Aries (March–April), it will do some harm (about which details are given) to plants; if it falls into a river, the river will be lacking in water; if into the sea its direction will indicate the part of the world which will be disturbed by pirates or war; if into a public place, it means civil war; if on the wall of the city, attack by enemies; if into a temple, danger to statesmen and to those at the royal court; if on statues, it means an eventful time, etc. The account about the other signs (months) is similarly arranged, but is, owing to a careless excerptor, very much shorter towards the end.

About the genesis of such texts only conjectures are possible. It is probable that in Babylonia portents and the events they announced were first recorded in historical annals, later separately (Iulius Obsequens' *Prodigiorum liber* may illustrate the process, even if it belongs to a different world), and projected into the future. This was followed by individual lists, according to the character of the signs, meteorological, astral, animal, etc. The final step was to make calendars of such portents, as in some Brontologies, for instance:[81] 'If in the month Nisan Adad makes his voice heard[82] and a

[78] Cf. *JHS* 69, 1949, 57 ff.

[79] See the important survey by Boll and Bezold, 'Reflexe astrologischer Keilschriften bei griech. Schriftstellern', (*Sitz.-Ber. Heidelberg* 1911, 7 Abh.) 5 ff.

[80] This comes from a stock common to Arrian, Pliny and Seneca and is of no further interest for this context. Lydus quotes p. 98, 6 ὁ μέγας Ἀπουλήιος for the paradox (anonymously recorded by Pliny 2, 137) that Marcia, the wife of M. Porcius Cato, remained unhurt by the lightning which killed her unborn child (date : c. 61–56, or after 50 B.C., see Münzer, *RE.* 14, 1602, no. 115). Because of the epithet ὁ μέγας I would attribute this information to the medical writer Apuleius Celsus, early first century A.D., teacher of Scribonius Largus. Priscian 6, 11 quotes 'Apuleius in Medicinalibus' for a prescription: this passage too, recorded by Hildebrandt 2, 638 amongst the fragments of Apuleius of Madaurus, ought to be given to our Apuleius.

[81] Cf. Jastrow, *Die Religion Babyloniens u. Assyriens* 2, 714; a fulgural calendar ultimately depending on this tradition is still used by the Mandaean priests: *The Book of the Zodiac*, transl. by E. S. Drower (1949), 166 f.

[82] Cf. Job 37, 2 'Hear attentively the noise of His voice and the sound that goeth out of His mouth. He directeth it under the whole heaven and His lightning unto the ends of the earth'; Enoch 59; Lyd. *de ost.* 21, p. 55, 5 W.

lightning of light colour is sent from the Sun, a rainbow, etc. . . .: the crop will be good for 37 years; those in need will be compensated; Nergal will cause destruction in the country, will do harm to Elam and get hold of Tupliash . . .' The prognostics for the other months are similar; there is often mention of a lightning, light, dark or like a gem, or that none occurs in the month in question. Texts limited to lightnings are less frequent.[83] One of them considers where the lightning arises, in the south, north, east, or west (in this order) or at all four points of the compass at the same time; its colour (in addition to the above, green and fiery are mentioned); whether it occurs at night-time, whether together with thunder, how often (the number seven is given), and in which direction it is moving (from south to east, and from north to east). The prognostics refer to flood, rain, eclipse of the sun, pestilence.

Now there is another text also Babylonian in origin though at least 2,500 years younger as we have it, which was first translated by a Jew into Greek and called by him the 'Apocalypse of the Prophet Daniel', later from Greek into Arabic, and finally in A.D. 1245 by Alexius Byzantinus into Greek again; and this is the version which we possess.[84] This 'Apocalypse' is divided into chapters according to the prognostics of the month, and each month is subdivided according to the various meteorological and astral phenomena, eclipse, unusual features of the moon, comets, thunder, lightning, hail, etc. The chapter concerning lightning in October contains the following: 'If it occurs on the first, it means to those in the East a loss of territory;[85] they will move towards the West, and those in the West will be frightened by them; private life will be disturbed by banditry, etc.; if it is a fiery lightning, it means sudden death (apparently to the ruler or of a powerful person), revolt of common people, etc.'

These parallels prove that our fulgural calendar is not an independent creation of the Etruscans who are explicitly mentioned in the introductory text (p. 95, 16 W.);[86] is it then Etruscan at all? It is, I believe, for four reasons. First (which is not decisive), because it is limited to lightnings. Secondly, because it often states where the lightning is coming from and what kind of objects it hits, which recalls the doctrine of the sixteen regions; again an indecisive reason because the Babylonians too considered the points of the compass. Thirdly (and this is more significant), we have seen above (p. 126) that the Etruscans distinguished between lightnings coming from the gods of the various zodiacal signs, which is nothing but the method of such calendars, also. These three reasons have some cumulative effect; they are joined by the fourth which places the case beyond doubt. The text of Lydus contains a number of prognostics, much too precise to be of general application; some of them were connected by Hase, Hertz, and Swoboda with certain events of Roman history,[87] but Boll (who knew nothing of his predecessors) was the first to do this convincingly.

Χαλδαῖοί γε μὴν δυναμέων ἀερίων εἶναι φωνὰς μὲν τὰς βροντάς φασι, δρόμους δὲ τὰς ἀστραπάς. φωνὴ βροντῆς also in the Brontology of *CCAG.* 3, 50 ff.; Bezold-Boll l.c. 21; Boll, *Aus der Offenbarung Johannis* 18; Cook, *Zeus*, 2, 829.

[83] Jastrow o.c. 2, 724 f.

[84] A specimen is edited by Boudreaux, *CCAG.* 8, 3, 171 ff. (cf. 3, 47 ff.); on its origin see Cumont *ibid.* 171; the text quoted above is on p. 176.

[85] The expression φοσσάτων σύναξιν is curiously reminiscent of *finium deminutionem* in Etrusco-Roman prognostics.

[86] It is also influenced by Hellenistic astrology (observed by Müller, 2, 167, 12) because it often derives the prognostics from the meaning of the sign: if the lightning occurs when the Sun is in Gemini, two men will fight against the state; when in Virgo, the fate of virgins and women will be affected; when in Libra, it concerns justice, measure and weight, and so on.

[87] C. B. Hase in his edition of Lydus (1823) p. xvi ff.; Swoboda, *P. Nigidii Figuli operum rell.* 31 f.; cf. Thulin 3, 88.

Boll suggested[88] that the prognostics p. 106, 27 (Sun in Pisces) νέος δέ τις εὐγενὴς στρατευσάμενος ἀπολέσει τὸ πειρατικὸν καὶ ἔνδοξος ἐπὶ τῇ νίκῃ γενήσεται, refer to the victory of Pompey over the pirates; p. 105, 22 (Sun in Scorpio) εἰ δὲ κατὰ δημοσίου τόπου ἐνσκήψει κεραυνός, νεανίας ἀναιδὴς τῆς βασιλείας ἐπιλάβηται, ἀσώτων καὶ διεφθορότων συντρεχόντων αὐτῷ to the plot of Catilina; and p. 103, 15 (Sun in Gemini) δύο δέ τινες κατὰ τῆς βασιλείας ἐπαναστήσονται, ὡς μερισθῆναι τὴν βουλὴν καθ' ἑαυτήν· μικρὸν δὲ ὕστερον ἑκάτερος αὐτῶν ἀποφθαρήσεται, πολλοὶ δὲ χάριν ἐκείνων κινδυνεύσουσιν to Caesar and Pompey. Boll further suggested Nigidius Figulus, the friend of Pompey and Cicero, as the probable author of these prognostics, and incidentally he is the only writer to be mentioned in the introductory text (p. 99, 17). Boll later adduced[89] a Nigidius fragment (91 Sw.) which, describing the sign of Gemini (Castor and Pollux), mentions among their achievements: '. . . Geminorum honore decoratos, quod ii principes dicantur mare tutum a praedonibus maleficiisque pacatum reddidisse', a passage which sounds very similar to that mentioned above in the first place. This is not all.

The same technique can be observed in the Tonitruale (also in Lydus), explicitly ascribed to Nigidius Figulus, which he, according to the title (p. 62 W.), verbally translated from Tages and which, according to his postscript (p. 88 W.), only applies to Rome. These two data suggest that Nigidius Figulus used an Etruscan model and transformed it to suit Roman conditions. It will be enough to quote a few instances from Kroll's valuable article 'Nigidius Figulus', *RE.* 17, 208 f. (though he is a little more cautious than I am in following Boll's lead on this slippery ground). Rome seems to be meant by βασιλὶς πόλις (65, 13) and πόλις (77, 22); discord, civil war, plot is often predicted, e.g. p. 70, 17 οἱ ὑπεξούσιοι τῶν εὐγενῶν σκέψονταί τι καινὸν ἐν τοῖς κοινοῖς, which Kroll translates with 'principes nobilitatis res novas molientur'; reference is often made to a tyrant and the sufferings caused by him. There are two interesting passages mentioning the rule of one man, 66, 16 εἰς ἕνα τὴν πάντων δύναμιν ἐλθεῖν φράζει · οὗτος δὲ ἔσται τοῖς πράγμασιν ἀδικώτατος, and 87, 16 εὐνοίᾳ τοῦ δήμου ἀνήρ τις εἰς ἄκρον εὐδαιμονίας ἀρθήσεται, so different in tone that one is permitted to speculate about Caesar and Pompey respectively. The probability that it was Nigidius Figulus who manipulated our *Fulgurale* in a similar way is largely increased by this explicit evidence. But there is, I think, more that can be said in favour of Nigidius' authorship.

Cicero's poem *de consulatu*, which deals with the evil signs of the year 65 B.C. can be confronted at more than one point with passages in Lydus.

(1) Lyd. p. 102, 5 (Sun in Aries) εἰ δὲ καθ' ἱεροῦ πέσῃ κεραυνός, τοῖς ἐνδόξοις τοῦ πολιτεύματος καὶ τοῖς περὶ τὴν βασιλείαν αὐλὴν ὁ κίνδυνος ἐνσκήψει.

Cic. v. 36 nam pater altitonans . . . /ipse suos quondam tumulos ac templa petivit/et Capitolinis iniecit sedibus ignis.

(2) Lyd. p. 102, 7 εἰ δὲ κατ' ἀγαλμάτων κατενεχθῇ, ποικίλας καὶ ἐπαλλήλους τὰς συμφορὰς τοῖς πράγμασιν ἀπειλεῖ · εἰ γὰρ χαρακτῆρες ἰδεῶν τινων καὶ κόσμια πόλεων τὰ ἀγάλματα ὑπωπτεύθη τοῖς παλαιοῖς, ἀρὰ τοῖς πράγμασιν ἡ περὶ αὐτὰ ὕβρις.

Cic. 39 tum species ex aere vetus veneratagque Nattae/concidit elapsaeque vetusto numine leges/et divom simulacra peremit fulminis ignis/ . . . (and mentions the damage done to the *lupa Capitolina*).

[88] Boll, *Reflexe*, etc. 11, 2.

[89] Boll, *Aus der Offenbarung Johannis* 11, 1.—It is worth adding that in Lucan 1, 639 ff. Nigidius Figulus is explaining the signs of the struggle between Caesar and Pompey; also that the oracle to which Sallust *ad Caes.* 1, 5, 2 and Horace *epod.* 16 point (cf. Kroll, *Herm.* 62, 1927, 374; Fuchs, *Der geistige Widerstand gegen Rom* 37) used a few years later essentially the same predictions.

(3) Lyd. p. 105, 22 (Sun in Scorpio) εἰ δὲ κατὰ δημοσίου τόπου ἐνσκήψει κεραυνός, νεανίας ἀναιδὴς τῆς βασιλείας ἐπιλάβηται, ἀσώτων καὶ διεφθορότων συντρεχόντων αὐτῷ.
p. 101, 20 (Sun in Aries) εἰ δὲ ἐν πολιτικῷ ἢ δημοσίῳ κατενεχθείη τόπῳ, ἐμφυλίους τε πολέμους καὶ στάσεις καὶ τοῦ πολιτεύματος ἀνατροπὴν δηλοῖ.

Cic. 49 omnes civilem generosa stirpe profectam/ volvier ingentem cladem pestemque monebant./ tum legum exitium constanti voce ferebant/ templa deumque adeo flammis urbemque iubebant/eripere . . .

In the first passage οἱ περὶ τὴν βασιλείαν αὐλήν are apparently the consuls, and οἱ ἔνδοξοι τοῦ πολιτεύματος Cicero and his friends in the Senate. The second passage follows immediately in both Lydus and Cicero; the correspondence is not doubtful despite the obscure expression of Lydus. The second sentence has the function of an (unusual) aetiology: the χαρακτῆρες ἰδεῶν τινων, 'symbols of some ideas', seem to refer to the *pignora imperii* for which in Cicero the *lupa Capitolina* is instanced. The third passage contains on both sides a clear reference to Catilina.

Cicero recorded the signs of 65 two years after their occurrence in similar terms (*Cat.* 3, 19), the havoc caused on the Capitoline hill, the collapse of the statues, the melting of the law-tablets, the damage done to the *lupa Capitolina*, the consultation of the *haruspices* and their verdict: '. . . caedes atque incendia et legum interitum et bellum civile ac domesticum et totius urbis atque imperii occasum appropinquare dixerunt, nisi . . .' The conclusion therefore is that much in Lydus in fact concerns Roman history; that at least the signs of the Catilinarian conspiracy are historical and the prognostics are identical with those given by the *haruspices*; others served to give expression to their author's political hopes and fears; and that the author was Nigidius Figulus. In addition, it was probably Nigidius Figulus who introduced in Rome the doctrine of the sixteen regions (see below, p. 145 f.), which suggests that his share in the diffusion of the Etruscan lore must have been more substantial than our explicit evidence would allow us to assume. We may thus suggest that he collected the portents of those eventful years and made with their help a new version of an Etruscan calendar; expert advice of the *haruspices* was no doubt available. We do not know how far he modified their doctrines; we only know from Lydus p. 100, 1 (= frg. 82 Sw.) that in his opinion a lightning always announced something harmful. This is confirmed by our text with two significant exceptions. One is the allusion to Pompey's victory over the pirates, and here we may take Nigidius' partisanship into account; the other is that which makes all prognostics connected with Capricorn favourable: happiness of the people, glory of the rulers, peace, and good crops (p. 106, 13). The only suggestion that can be made is that here the text was revised later to suit the Pax Augusta, ascribing all its benefits to Augustus' natal star. This suggestion, however, includes an absurdity. Capricorn was Augustus' natal star only in a Lunarium:[90] when he was born the Moon was in Capricorn but the Sun in Libra. Our *Fulgurale* which follows the course of the Sun would then imply that the change for the better would take place if lightning occurs in December (Capricorn) and not in September when Augustus was born. But such inconsistencies do occur in astrology and are often caused by the popularity of certain motifs and their consequent transfer from their original place into less appropriate surroundings.

[90] Cf. J. G. Smyly, *Hermathena* 38, 1912, 156 ff.; Housman, *Manil.* 1², p. 93 ff.; Norden, *Geburt des Kindes* 160; Bayet, *RÉL.* 17, 1939, 153 ff.

The existence of Etruscan fulgural calendars is thus established through Nigidius Figulus using them as his models. Little can be suggested about their probable shape. They certainly followed the pattern of the lunar, solar, and meteorological calendars of the East but paid greater attention than those to the source and direction of the signs and to the objects which were hit. Considering that they often served a Roman *clientèle*, it is also possible that they had already incorporated portents of Roman, not less than of Etruscan, history. If they did, Nigidius Figulus only made a further step in the same direction, and that to promote his and his friends' political ends.

8. *Divination and Magic.* Pliny in § 140 turns to the view that lightning can be obtained by prayers or forced by sacrifices and quotes the Etruscan king Porsina, who obtained it to destroy the monster Olta, who devastated the fields of Volsinii. Roman tradition represented by Piso held that the practice was known in Rome earlier still, as Numa often obtained a lightning, and that Tullus Hostilius in a similar attempt failed and was killed, and thirdly that this practice was the origin of the cult of Iuppiter Elicius. A criticism of this doctrine follows, inspired by absolute determinism: the gods cannot be moved by prayers or bribed by sacrifices. The rest of the paragraph serves this criticism by maintaining the infallibility of the lightning: it can not only predict another lightning to come but also reveal the past.

This paragraph shows again an abrupt change. The horoscopes are dropped, and magical actions instanced. But this time evidence from other sources has helped to fill the gap: the Etruscans were not unconditional servants of determinism and had their rules which enabled them to delay fate. And the description of these rules led, as it seems, to the wider issue how the priest can force the divine instrument into his service.

(*a*) *The Case for Magic.* Seneca is no longer available in the same sense as before. In c. 49 he turns to the list of Caecina (below, p. 149) which is not recorded by Pliny. This does not mean that he preserves no corresponding evidence but merely that we must collect it from different places. So the lightnings that can be obtained are called in the list of Caecina *fulmina hospitalia* (49, 3) 'quae sacrificiis ad nos Iovem arcessunt et, ut verbo eorum molliori utar, invitant; sed non arcesseretur invitus:[91] nunc venire eum magno invitantium periculo affirmant'. This definition is not easy. Its background is formed by the two extremes; the unlimited power of the priest and absolute determinism. And the Etruscan compromise was that the god can be conjured up only if he himself wants to come; otherwise he would come to destroy the impious.[92]

The rivalry between the Etruscan and Roman traditions quoting Porsina and Numa respectively is curious, and seems to be the result of the Roman opposition to the increasing foreign religious influence, Etruscan and Greek. It is known that Numa had

[91] This is the reading of cod. E, on the whole unduly neglected by Gercke who reads 'sed non irasceretur invitatus': but this makes no sense if it means what Oltramare rendered: 'mais invité, il ne serait pas courroucé.' What is meant is, I think: 'but he could not be conjured up against his will', that is, there is a limit to man's magical power; for the wording cf. Macrob. 3, 5, 8 '. . . invito deo offerri eam (hostiam) putabant'; Petron. 122, v. 158 ' testor ad has acies invitum accersere Martem/invitas me ferre manus'.

[92] The danger is exemplified by Piso (in Pliny l.c. and 28, 14; cf. Livy 1, 31, 8) with the failure and death of Tullus Hostilius. Arnobius 5, 1, following Valerius Antias, gives the details of the sacrifice: onion, hair and anchovy were required, and these owing to the interpretatory tricks of Numa (cf. Heracles' interpretation of the sacrifice of the Saturnalia in Macrob. 1, 7, 31). This part of the evidence of Valerius Antias may not be more trustworthy than the rest which I have omitted: yet it is good enough as an instance for the kind of sacrifice which the Etruscans may have had in mind (cf. Thulin 1, 120 ff.; Diephuis, *Naturkräfte u. ihre Verehrung in der altröm. Rel.* 1941, 116 f.). An interesting analogy is the forcing of demons with saliva, nail and hair: Psell. *de operat. daemon*, *Patr. Gr.* 122, 869 A; cf. Lobeck, *Aglaoph.* 110b; Bidez, *Catal. alchim. gr.* 6, 103.

the same authority in Roman religion as Tages had in the Etruscan; and just as Tages emerged from the earth to the ploughing Tarchon and revealed to him the Etruscan discipline, so the ploughing Cn. Terentius found in 181 B.C. the books of Numa.[93] It is true that these books were destroyed by order of the Senate, but other apocryphal books must have turned up about that time or soon afterwards: Varro, in his *Curio de cultu deorum* (Aug. *CD.* 7, 35), referred to Numa's works on hydromancy and necromancy (the latter also practised by the Etruscans). Conjuring up a lightning belongs to this complex; it was another magical practice of Numa's and recorded as early as Piso. In addition, there was the old-established ritual concerning the place (*bidental; fulgur conditum*) and the man hit by lightning, and the latter was regulated by a 'Law' of Numa.[94]

The essence of the story is that the lightning can be helpful and harmful. It helped to destroy the monster of Volsinii, Olta, who is otherwise unknown. The monsters of Greek mythology may be recalled, for instance the Chimaera or Typhon, and their destruction by gods or heroes whose place is taken here by the Etruscan king. There are further instances in history or pseudo-history: in A.D. 408, Etruscan *haruspices* offered to turn away Alaric from Rome with lightning and thunder, just as their own city Narnia was once saved from a similar danger.[95]

The story contains ageless elements. First the divine weapon. An Egyptian inscription referring to the campaign of Thutmosis III against the Mitanni (*c.* 1459 B.C.) mentions a star coming suddenly from the south and causing the death of the hostile troops.[96] The Annals of the Hittite King Mursilis II (*c.* 1353–25 B.C.) speak of a thunderbolt sent by the 'powerful god of the sky' that hits the country, and city, of the enemy and brings disease to their king.[97] On the Greek side, Dionysus and Heracles, the great conquerors of mythology, who were made to anticipate Alexander's conquests of the world once invaded India but were turned away by lightning.[98] The most elaborate story concerns the theurgist Iulianus, the alleged author of the Chaldaean Oracles, who during the campaign of the emperor Marcus against the Quadi in A.D. 172 turned away the enemy by conjuring up thunderstorm and lightning or by forming a human mask of clay which discharged the lightning.[99]

Secondly, the divine weapon in the hands of men. Porsina and Numa achieve what was achieved before them by Prometheus and 'Zoroaster': the former brought down the heavenly fire to mankind against the will of the gods (and was punished for it),[100] the latter, the inventor of magic art, was able to elicit sparks from the stars and was at

[93] Pliny 13, 84 quoting Piso, Cassius Hemina, Tuditanus, Varro; cf. e.g. Schwegler, *Röm. Gesch.* 1, 564 ff. There is other curious evidence worth considering, e.g. Dion. Hal. 3, 36, 4; Serv. *Aen.* 6, 859; Lyd. *ost.* 16a (p. 49, 22), the latter quoting a commentary on Numa's works by a Fulvius (Nobilior?).

[94] Cf. e.g. Thulin 1, 92 ff.; Diephuis, o.c. 95 ff.; *lex Numae*: Fest. 178 M. (190 L.); Bickel, *Rhein. Mus.* 81, 1931, 279 ff.; Diephuis 111 ff.; Cumont, *Lux Perpetua* 329 f.

[95] Zosim. 5, 41. Another version of this(?) story is preserved by Cosmas of Jerusalem: heavenly fire destroys the barbarians attacking Rome under a king (the name is missing in the text) but also the 'philosopher' whose prayer brings down the fire (*Patr. Gr.* 38, 623=Nonn. *in Greg. Naz.*, *Patr. Gr.* 36, 1001); cf. Pettazzoni l.c. 222.—For a possible representation of Olta on Etruscan urns see Brunn-Körte, *Rilievi delle urne etrusche* 3, 16 ff.; pl. 8–10; Mommsen, *Ges. Schr.* 8, 35, 1.

[96] Cf. M. B. Reisner, *Zeitschr. f. ägypt. Sprache* 1933, 24 ff.; Friedrich, *OLZ* 39, 1936, 135 ff.

[97] Cf. Götze, *Die Annalen des Mursilis* 1933, 46 ff.; Friedrich, l.c.

[98] Philostr. *Apoll. Tyan.* 2, 33; cf. Herod. 8, 37, 3; Nock, *AJA* 50, 1946, 155, 60.

[99] Suid. s.v. Iulianus; Psell. *Scr. minora* 1, 446 Kurtz; Cass. Dio 71, 8, 4 ascribes the miracle to the Egyptian Arnuphis: cf. Dodds, *JRS.* 37, 1947, 56; J. Guey, *Rev. phil.* 74, 1948, 34 ff.; id., *Mél.* 60, 1948, 105 ff.; 61, 1949, 93 ff.

[100] No evidence is needed for Prometheus; the version that it was the lightning which he stole from heavens first appears in Lucr. 5, 1209, and in Serv. *Ecl.* 6, 42 he is given the same role as in our passages Porsina and Numa.

the end carried to heaven by lightning or was destroyed by it according to the will of the Evil Demon.[101]

Thirdly, the punishment of the impious. This is a complementary motif and could not exist without its opposite. Lightning can be the vehicle of divine power to exalt those who deserve it.[102] There is a version of the story of 'Zoroaster' suggesting that this was in fact his ultimate fate;[103] the examples of Greek mythology, Semele, Heracles, Asclepius, Erechtheus who were carried to Olympus by lightning are well known.[104] And conversely lightning can be punishment for the arrogant who want to usurp the power of Zeus—Capaneus, Salmoneus, and their mortal imitator, Clearchus, the tyrant of Heracleia.[105] Tullus Hostilius and his duplicate, the Alban king Remulus or Amulius,[106] belong to this last category. It was of no avail for him to study the works of Numa (this mentioned already by Piso): only the pious can succeed.

(*b*) *The Case against Magic.* What follows is counter-attack. It is true that there is the cult of Iuppiter Elicius suggesting that one can conjure (*elicere*) the power of Iuppiter. But (the adversary answers) it is absurd to believe that rites can command nature and that one can get its power in exchange for offerings. Moreover, lightning shows such a degree of prescience (which in his opinion apparently proves again that man cannot play with such a perfect instrument) first, that it can announce another lightning to come on a certain day and secondly, that it can also reveal the past.

This debate shows that the Etruscans were well acquainted with the possible objections to both divination and magic. The first of the two instances, also attested by Seneca 51 ('. . . fulmina, quae significant . . . iterum eodem anno eidem homini futurum fulmen'),[107] seems to have been borrowed from meteorological prognostication. Thus Vitr. 9, 6, 3: '. . . tempestatium significatus post futuros ante pronuntiare', which did not predict, it is true, lightning but the weather which brought it. The *haruspices*, of course, did not indulge in pure meteorology but used it for more sweeping and less justified claims. They were perhaps inspired by the astrologers, who were not satisfied either to announce the date of an eclipse without adding what it would bring for mankind.

The second instance is more difficult. Two parallels used to be quoted, the *peremptalia fulgura* (Caecina in Seneca, 2, 49 and Festus 217 M. = 236 L.) which destroy the effect of earlier lightnings, and the *obruta* which hit places which were hit previously

[101] Zoroaster frg. B 45; 51a B.-C.

[102] Cf. Rohde, *Psyche* 1, 320 ff.; Usener, *Kl. Schr.* 4, 471 ff. treated this point only in passing.

[103] The story is not Persian in origin, and is alien to our other Zoroastrian evidence: Bidez-Cumont, *Les Mages hellénisés* 1, 154; 249. There is ample evidence from Greek and Semitic sources, cf. e.g. Soph. *O.C.* 1658; *Trach.* 953; Eur. *Suppl.* 829; Pausan. 5, 27, 3; already Hom. *Il.* 6, 345; *Gen.* 19, 24; *Lev.* 10, 2; 2 *Kings* 2, 11 (Elijah); Rohde l.c.; Radermacher, *Soph. O.C.* (Introduction); Cumont, *Ét. syr.* 96; id., *Rev. arch.* 1939, 49 f.; Cook, *Zeus* 2, 33; Strong, *Apotheosis and After-life* 227 ff.; Bidez-Cumont o.c. 2, 53, n. 7; Pease, 'Some Aspects of Invisibility', *Harv. Stud. Class, Phil.* 53, 1942, 1 ff. (discussing also other forms of disappearance).

[104] Pind. *Ol.* 2, 27; Diod. 4, 38, 4 f.; Minuc. 22, 7; Hygin. *Fab.* 46; Cook, *Zeus* 2, 27.

[105] Soph. *Ant.* 127 ff.; Eur. *Phoen.* 1172 ff.—Eur. *Aeol.* frg. 14 N.; Soph. frg. 494–8 N.; Diod. 4, 68; 6, 6, 4; 6, 7; Verg. *Aen.* 6, 585 ff. (with Heyne's Excursus 12); Manil. 5, 91; Hygin. *Fab.* 61; Serv. *Aen.* 6, 585; cf. Eitrem, *Symb. Osl.* 10, 1932, 32; Weinreich, *Menekrates Zeus u. Salmoneus* 86 f.—Clearchus (Iustin. 16, 5, 11) acted perhaps under Macedonian influence: some of their rulers took the epithet 'Keraunos', and Seleucus Nicator established in Seleucia a special cult of the lightning (App. *Syr.* 58); cf. Usener, *Kl. Schr.* 4, 476 f.; Weinreich, o.c., 17.

[106] The complete evidence in Schwegler 1, 578; 581 f. On Remulus and Amulius see Ovid *Met.* 14, 617; *Fast.* 4, 50; Livy 1, 3, 9; Dion. Hal. 1, 71, 3 (where Ἀμώλιος is to be substituted for Ἀλλώδιος of the MSS.: see Kroll, *RE. Suppl.* 4, 22); Cass. Dio 1, p. 5 B.; Diod. 7, 5, 11; 7, 7.

[107] This is not Gercke's wording, but is nearer to the MSS. than his.

but did not receive ritual purification.[108] In spite of these two parallels I do not think that this explanation applies to our passage. Leaving aside obscure details, I would object to the whole: we expect an argument which is at least as significant as the first instance, and what we get is either that more forceful signs will come or that ritual omissions can be detected. Some MSS-readings show that this shortcoming was soon discovered: *fatum* and *fata* were brought in for *factum* and *facta*, and *apertura* inserted before *prius alia facta*. The last reading (which does not rest on reliable tradition) in fact takes into account the words that demand a corresponding expression: *quae lateant*. I would restore this correspondence by changing *peremptura* into *promptura* which is, considering the almost identical medieval compendium for *per* and *pro*, a slight change.[109] The sentence would then mean: '. . . and whether they will reveal an event (which just occurred) or other events of the past which are hidden . . .' If this is correct, the result is another sweeping statement borrowed from the astrologers (see for instance, Vitr. 9, 6, 2: 'propria est eorum [Chaldaeorum] genethlialogiae ratio, ut possint ante facta et futura ex ratiocinationibus astrorum explicare').

The argument is unsatisfactory, because the harmony the Etruscans (and not they alone) attempted between the two extremes was not possible. And yet they claimed both that they could force the lightning into their service at will (with a slight limitation) and that their divination was so perfect that it could reveal both future and past. The contradiction becomes visible only in a theoretical argument; in their practice the *haruspices* were certainly not much worried about it.

9. *The Sixteen Regions*. The greater part of § 142 containing scientific matter can be omitted, the rest together with § 143 f. rearranged. It will be noticed that the sentence 'laeva prospera . . . spiritus remeat' does not make sense where it stands but where Pliny resumes the point (§ 143), 'ex iis . . . attingunt'; a third fragment of this complex follows soon afterwards (§ 144): 'ideo cum . . . aut dira'. The trouble is caused, I think, through the insertion of a full account of the sixteen regions. The following discussion treats this as the principal item and uses the rest as illustration.

The sixteen regions depend on the four sectors between the four points of the compass, each of the four sectors being divided into another four.[110] The order is from North to East, South, West, and North again. The eight regions on the East side are left and lucky, the other eight on the West side right and unlucky. It is favourable if the lightning returns to the region from which it comes. The first region is the best; the value of the rest diminishes proportionately with their distance from the first region; the worst signs come from the regions between West and North.

This system[111] must have been established in the earliest period because it rests on the two elementary means of orientation, the four cardinal points and right and left. The combination of the two methods means progress because it firmly fixed the good or evil significance of the heavenly districts. It is impossible to say how the gods were originally distributed among the sixteen regions. We first find such a distribution on

[108] It is so explained e.g. in Mayhoff's Appendix, p. 538; Thulin 1, 79; cf. D. J. Campbell, *C. Plini Secundi Nat. Hist. Liber Secundus* (1942), 72 f.

[109] Cf. Hor. *CS.* 9 'diem qui promis et celas'; *AP.* 182 'non tamen intus digna geri promes in scaenam'; *carm.* 1, 34, 13 'obscura promens'; 3, 28, 2 'prome reconditum . . . Caecubum'; Firmic. 5, 7, 2 'sententiam promere' (1, 2, 12; 6, 14, 4; 7, 24, 7).

[110] Cf. Cic. *de div.* 2, 42; Serv. *Aen.* 8, 427; Mart. Cap. 1, 45 ff.

[111] Cf. *JRS* 36, 1946, 103 ff. (with bibliography).

the Piacenza liver (the date of which, however, is not yet established) which does not allow any safe conclusions. We know the system best from the version which was given to it probably by Nigidius Figulus (Mart. Cap. 1, 45 ff.) with which Pliny in all essentials agrees. This version is a combination of the doctrine of the four vertica segments of a hemisphere divided by the four cardinal points with the doctrine of concentric spheres, the latter depending on Platonic theology. The Platonic system begins in the highest sphere, the aether, which became in our system the North, and places there the highest gods; it passes to that of the Sun, here the East, of the Moon and of the air, and finally to the earth: in our case the air is identified with the West and is the dwelling place of the dead; and the last region is on the earth.

We notice that we have already met part of this doctrine in the service of another system (above, p. 130). The first region in the North is the highest and has therefore the purity of the aether: any sign coming from there brings good tidings. Pliny now quotes the instance of Sulla,[112] and even better evidence is contained in Serv. Dan. *Aen.* 2, 693 'sinistras autem partes septentrionales esse augurum (he means *haruspicum*) disciplina consentit, et ideo ex ipsa parte significatiora esse fulmina, quoniam altiora et viciniora domicilio Iovis'. And conversely, the lightning which according to Dion. Hal. 9, 6, 2–4 hit the praetorium of Cn. Manlius in 480 B.C., destroyed the altar, damaged his weapons, and killed his horse and some of his servants, thus announcing the occupation of the camp by the enemy and the death of prominent men, among these Cn. Manlius, must have come from the districts of the extreme West. Those districts border on the first only on a diagram and are in fact (as we have seen above) at the greatest distance from it. Another instance of this kind is Pliny 2, 92 'cometes nonnumquam (Kroll:[113] *numquam* codd.) in occasura parte caeli est, terrificum magna ex parte sidus atque non leviter piatum.' This passage does not concern the Etruscans, nor the lightnings, nor the sixteen regions, and yet it is, I believe, a pertinent passage.[114] For the West was of evil significance not just since the Platonic and Etruscan systems but because it was the seat of the dead according to a much earlier belief.

Needless to say, the sixteen regions are an exclusive system built on a different principle from that of the zodiacal and planetary systems. And yet the Etruscans used the three side by side and also combined them in a more or less superficial fashion. We have seen above (pp. 127 ff.) how they fitted the three *manubiae* of Iuppiter, identical with the planetary lightnings, into the zodiacal system. But they also fitted the same three *manubiae* into the sixteen regions by assigning the first three to Iuppiter, Ps.-Acro, *Hor. c.* 1, 12, 19 'secundum aruspicum dicta vel disputationes, qui Iovem primam, secundam et tertiam partem volunt in fulminibus tenere (cf. Mart. Cap. 1, 45 ff.). Further, they placed the *di Consentes* into the first, the *di Novensiles* into the second region (Mart. Cap. 1,

[112] This evidence probably comes from Sulla's Memoirs, and its author is the *haruspex* Postumius (Schulze 215) who accompanied him on his campaigns and provided him with similar prognostics in 89 B.C. at Nola (Cic. *div.* 1, 72 = Sulla frg. 9 P.) and in 83 at Tarentum (August. *CD.* 2, 24; Plut. *Sulla* 27 = frg. 18 P.).

[113] Kroll, *Kosmologie d. Plinius* 25.

[114] I do not think that the direction of the returning lightning can be observed as well as that of the coming. It may be that the Etruscans borrowed this detail from other disciplines. The shooting stars for instance announce wind and storm for the district from which they come or to which they go: cf. Amm. Marc. 25, 2, 4; Gundel; *RE.* 3A, 2444 f. An important, though puzzling, passage is Hippocr. *de diaet.* 4, 89 (6, p. 650 L.; *c.* 370 B.C.: Rehm, *Parapegmastudien* 38): a star seen in dreams which leaves its path, is light, clean and moves towards east, means health; if it is pale and black and moves towards west or the sea or the earth, it means illness.

46 f.), which is equally impossible because both stand, in two variations of a different system, for all the districts of the sky.

Originally the task of the *haruspices* was simple: it was enough to know from which part of the sky the lightning came to determine its meaning. Later they were no doubt assisted by some sort of a compass divided into sixteen sections which contained, as on the Piacenza liver, the names of the gods who ruled over them, first perhaps just a few, later, as in the list of Martianus Capella, all the gods of a theological system. The prognostics then depended on the character of the particular god. In the course of time the system must have become so complicated that no interpretation could be given without inspecting some special *libri fulgurales*. It would be idle to ask the question when this and when the other systems were preferred and why. That this system was used is proved by the instances of Cn. Manlius and Sulla, although the former instance is no doubt fictitious.

The rest of § 144, consisting of two addenda, has nothing to do with the sixteen regions. One is that certain lightnings must not be communicated except to a guest or a father—a rule which I cannot explain. The other is the conventional argument of the adversaries of divination: how can it be right, if even temples, like that of Iuno in 115 B.C., can be destroyed by lightning? With this the Etruscan narrative in Pliny ends.

10. *The Doctrine of Caecina.* According to Seneca 2, 39, Caecina held that there were three classes of lightning: (a) *consiliarium*, (b) *auctoritatis*, (c) *status*. The first advises for or against an action which is under consideration; the second occurs after an action and announces whether it will have a good or evil effect; the third when an action is neither considered nor undertaken, and threatens or promises or warns.

(*a*) and (*b*) These classes cannot be compared with any other known to us so far: they do not concern the origin of the lightning or its significance but the occasion of its arrival. The term 'consiliarium' is illustrated by an incident during the campaign of the emperor Julian in A.D. 363 (Amm. Marc. 23, 5, 8 ff.). A soldier, Iovianus, was killed by lightning, which the *haruspices* explained as a prohibitive omen, one of the alternatives of the *fulmen consiliarium* (defined in the same words as in Seneca), advising that the march should not be continued. A second illustration comes from extispicy. According to Trebatius Testa ('libro I de religionibus'), the *haruspices* distinguished between *hostiae animales* and *consultatoriae*, the former serving as sacrifice only, the latter as a means of learning the will of the divinity (Macrob. 3, 5, 1).[115] Thirdly, there is a close analogy to the Roman augural doctrine[116] in so far as these two classes contain only a simple message, yes or no, good or evil, and also because they roughly correspond to the *auspicia impetrativa* and *oblativa*, the former asked for before an action, the latter given by the divinity without being asked, for instance a lightning before or during an assembly which could then not be begun or continued. These two classes are not of particular interest for us because they are common to elementary divination everywhere and are not the outcome of a special doctrine.

(*c*) This is the only class which concerns the future in more than a summary way. Of its three categories (*minatur*, *promittit*, *monet*), Caecina gives an instance only for the last, the *monitorium fulgur*, which warns of fire, deception of relatives, or treachery of slaves. This category is also mentioned in the detailed list of Caecina (below, p. 149):

[115] Cf. Thulin 2, 11. [116] Cf. Wissowa, *Religion*[2] 531 f.

'monitoria, quibus docetur, quid cavendum sit'. A third occurrence of the term can be restored in the badly mutilated article of Festus 157 M. (146 L.) *Muta exta.* The Epitome shows that at the beginning the *muta exta* were defined as containing no signs; the rest dealt with the opposite term which Müller restored as ⟨*ad*⟩*iutoria* (scil. *exta*). Little is left of the rest: *ab in . . .* (either *incendio* or *insidiis*), then *a veneno talique* and *instare periculum* (the *exta* warned of poison or some other plot), and finally *finium deminutionem* (announcing, in the case of public consultation, loss of territory). But *adiutorius* is a medieval word (developed from the post-Augustan *iutorium*), and, considering the correspondence between the remains in Festus and our Seneca passage, I read and supplement ⟨*mo*⟩*nitoria.* That is to say, the same term and the same kind of prognostics were applied to both entrails and lightnings.[117] The *monitorium fulmen*, however, is either the third category of a tripartite system or one of the many on a long list, whereas the *monitoria exta* belong to a twofold division into significant and insignificant signs. The latter is, of course, a more obvious division and corresponds to the *bruta fulmina et vana* and *fatidica* (Pliny 2, 113), and to the division of Attalus into *quae significant* and *quae nihil significant* (below, p. 151). Leaving the long list aside as unsystematic, we observe that our tripartite system too is artificial. There is no real difference between *minatur* and *monet*, and *promittit* too has the same quality of a significant sign, differing only under the other distinction between good and bad signs which is not discussed here. The Etruscans were fond of the number three: in this Caecina-chapter we had two triads, and above we met the three *manubiae* in two variations; and further instances could be added.

What remains of the whole classification is that the signs could be divinatory in the Roman sense and beyond that. For the latter the *monitoria fulmina* are instanced which are closely related to the *monitoria exta.* Following the evidence in Pliny we were led to the comparison of celestial matter, planets, zodiac, heavenly districts; here we are led to the methods of extispicy. This is not surprising. Συμπάθεια in the cosmos was a popular belief before it was taught by philosophy. Babylonian divination studied both celestial and animal signs; the Chaldaean Sudines, *c.* 240 B.C., was not only an astronomer and astrologer but examined the entrails like a *haruspex* (Polyaen. 4, 20: interesting Onosand. 10, 28; *Michigan Pap.* 149, col. 4, 18 ff.). *Fulgur(i)ator* and *haruspex* were originally different terms, but L. Cafatius of the bilingual inscription *CIL.* XI, 6363 was both *haruspex* and *fulguriator* (*trutnvt frontac*), and mostly *haruspex* alone was used for both. Vergil's Asilas (*Aen.* 10, 175) and Lucan's Arruns (1, 588) were experts in both disciplines, and Tarquitius Priscus and Iulius Aquila wrote on both. What the one system possessed had to be identified in the other system as well. The Piacenza model shows that the sixteen celestial regions were applied to the liver. Further, the entrails could contain sections which concerned the family, friends, and enemies and announced accordingly damage, inheritance, plot, war:[118] these indications are comparable to those of the lightning which strikes the house, the home territory, or that of the enemy. The two doctrines influenced one another from the beginning of Etruscan divination; in the course of time the methods became more refined under the influence of a more developed

[117] Cf. Cic. *div.* 2, 32 '(exta) ab aqua aut ab igni pericula monent; tum hereditates, tum damna denuntiant'; the above list is curiously constant, see Livy 27, 16, 15; Hor. *ep.* 2, 1, 119; Tac. *hist.* 1, 27.

[118] Cf. e.g. Cic. *div.* 2, 32 (quoted in the preceding note); for further details see Thulin 2, 37 ff.

cosmic system which came from the East. These methods were not less popular than the others, and it is surprising that Seneca (and Caecina) dropped them in the following chapters in favour of the celestial lore which was discussed by Pliny exclusively.

11. *The List of Caecina.* Caecina is quoted for the second time in c. 49 for the names of the lightnings and their definitions. There is no visible order in the list, alphabetical or systematic. The *monitoria* already appeared as one of the three *genera* and, in extispicy, as one of the two (above, p. 147 f.); others, the *fallacia*, are defined in the same words as is the second *manubia* sent by Iuppiter on advice of the twelve *di Consentes* (above, p. 127); the *atteranea* are known to us from the theoretical discussion in Pliny (above p. 130), so are the *hospitalia* and *auxiliaria* from the instances of Porsina and Numa, which are also in Pliny. Disregarding the original sequence, one could group together the *monitoria*, *pestifera*, *ostentanea*, and *regalia* as giving prognostics; the *fallacia*, *ostentanea*, *peremptalia*, *attestata* as contrasting terms; the *postulatoria* and *obruta* as concerning cult; the *hospitalia* and *auxiliaria* as concerning magic. Analogies, welcome in themselves, do not help further. Four of the thirteen terms, *postulatoria*, *adtestata*, *peremptalia*, *pestifera*, also occur in Festus with identical explanations;[119] the *ostentatoria* and *peremptoria* in Serv. *Aen.* 8, 429 (cf. 1, 230)[120] and form the first two of a tripartite system, the third being the *praesaga*. The first is defined as in Seneca: '. . . quo terror incutitur', but the second is, in contrast to Seneca, destructive.[121] The *renovativum fulgur* mentioned by Festus 289 M. (366 L.) is missing in Seneca but is apparently identical with his *attestata*.

Comparing the terminology of other disciplines, we recall again the *monitoria* of extispicy; we find the *pestifera* too in extispicy but also in astrology applied to the planet of Saturn or to the pestilential winds, λοιμικὰ πνεύματα.[122] There are further the *regalia exta* which announce unexpected rule to the powerful; this is no doubt a more correct explanation than the menace of kingship inferred from the *fulmina regalia*, which looks very much like *interpretatio Romana*.[123] It is common in Eastern divination to promise kingship to the favoured, and there is also in Rome of the first century B.C. a frequent reference to a coming king, and that not always in the sense of a coming calamity.[124] The *attestata* seem to come from the juristic sphere, but the verb *attestari* is also used in medicine and astrology, in the latter pointing to the co-operation of two or more planets.[125]

[119] Paul. 12; Fest. 210; 214; 245 M.(=p. 11; 230; 284 L.). The natural conclusion is that Verrius Flaccus too depends on Caecina. But Festus 214 M. (230 L.) quotes for the *peremptalia fulgura* Grapus (which is corrupt: Granius and Gracchus have been suggested).

[120] Schmeisser's conjecture *ostentanea* in Seneca for *dentanea* of the MSS. is based on this passage; Thulin 1, 27; 80; 96 defends the tradition, I think, in vain.

[121] It is difficult to say who is right. Servius sounds more trustworthy, but Seneca's (and Verrius Flaccus') definition is supported to some extent by the grading of the lightnings (see Fest. 214 M.; Serv. Dan. *Aen.* 1, 42) and also by the prevalence of lightning over the signs by birds and entrails (Sen. 2, 34, 3); this was also held by the Roman *augures* who called the sign by lightning *auspicium maximum* or *optimum* (Cic. *div.* 2, 74; 43; Cass. Dio 38, 13, 3; Serv. Dan. *Aen.* 2, 693; *Ecl.* 9, 13).

[122] There is some disagreement. This lightning announces death and exile (incidentally a frequent pair in astrological prognostics, see Firmic. 3, 5, 6; 8; 11; 4, 14, 8; 6, 15, 9), not pestilence, and the analogy in extispicy is not conclusive (Fest. 245 M. ' pestifera auspicia sunt cum cor in extis non invenitur aut caput in iocinere'). Pestilence is frequent among Roman portents; in astrology: Ptol. *Tetrab.* 2, 9, 5; 12.

[123] Fest. 289 M. (366 L.) 'regalia exta appellantur, quae potentibus insperatum honorem pollicentur; privatis et humilioribus hereditates; filio familiae dominationem'. Even this is to some extent *interpretatio Romana*: originally the sign announced a king.

[124] Cf. e.g. the oracle of Lentulus (Cic. *Cat.* 3, 9; 4, 2), the comet of 44 B.C. (Serv. *Ecl.* 9, 46; to be combined with App. *b.c.* 4, 4 and Serv. Dan. *Aen.* 10, 272), the Cumaeum Carmen used in the Fourth Eclogue. But here again the Romans often give a new turn to the prognostics when finding in them a threat of tyranny and servitude.

[125] Cf. Serv. *Aen.* 2, 691 'non enim unum augurium vidisse sufficit nisi confirmatur ex simili'. The astrological term is different, Firmic. 8, 12, 2 'si vero Mars solus attestante Mercurio viderit locum,' etc.; 8, 15, 5; 17, 6;

It is not a doctrine to which this confusing variety leads but a practical handbook, another form of the *libri fulgurales*. It is known that such handbooks were in use. There was an *Ostentarium Tuscum* (Macrob. 3, 7, 2) about various animals and their significance; an *Ostentarium arborarium*, translated by Tarquitius Priscus (Macrob. 3, 20, 3), about trees and their religious functions. Pliny 10, 37 mentions catalogues of birds with illustrations, which suggests that the others too may have contained illustrations; there were also the *libri haruspicini* and the *libri rituales*. Needless to say, the *haruspices* were well served with a similar catalogue of lightnings with definitions and prognostics. But we cannot clear up all difficulties. It was easy to identify the *fulmina regalia* when the principal places of the city were hit, or the *inferna* when the fire broke out from the earth. But others, the *pestifera*, *hospitalia*, *auxiliaria*, could not be identified by a simple inspection of the book. It seems therefore that the handbook originally contained categories of the former type but later became a more or less complete repertory by including also the more speculative terms and definitions. This shape of the handbooks raises a wider issue. The Romans, too, had their sacred books the *libri pontificales*, *augurales*, those of the Arval Brethren, and so on; but these contained prayers, formulae, cult instructions and interpretations, but no prognostics; and the same applies to the Greeks. That is to say, the Etruscans followed here too the practice of the Babylonians and of the other races of the East.

12. *The System of Attalus.* Seneca prefers the system of Attalus[126] (50 f.) to the list of Caecina because of its clarity; arranging it in a tabular form will shorten the discussion.[127]

A. quae significant

i. quae ad nos pertinent

1. laeta
   - (*a*) mansura
   - (*b*) caduca

2. adversa
   - (*a*) inevitabilia
   - (*b*) evitabilia
   - (*c*) quae minui possunt
   - (*d*) quae prorogari

3. mixta
   - (*a*) partem habent boni, partem mali
   - (*b*) mala in bonum
   - (*c*) bona in mala vertunt

4. nec adversa nec laeta

ii. quae ad nos non pertinent

B. quae nihil significant

1. cuius notitia nos effugit
2. quorum significatio vel nulla est vel perit.

This system was not created by Attalus. The two principal divisions, A. and B., also occur in Pliny 2, 113: the *bruta fulmina et vana* on the one hand (with the instance of their hitting mountains and the sea), and the *fatidica* on the other; further, in extispicy there is the division into *muta* and *monitoria exta* (above, p. 148). Again, the two sub-

23, 2; 27, 8; 29, 13. It is the translation of ἐπιμαρτυρεῖν (e.g. *CCAG.* 5, 4, 197). This increasing the force of a sign is the original meaning of Roman *augurium* (*augere*) which did not disappear entirely; interesting, though not quite correct, Serv. Dan. *Aen.* 1, 398 '. . . in libris reconditis lectum esse, posse quamlibet avem auspicium adtestari, maxime quia non poscatur. hoc enim interest inter augurium et auspicium, quod augurium et petitur et certis avibus ostenditur, auspicium qualibet avi demonstratur et non petitur: quod ipsum tamen species augurii est'.

[126] He is known only through Seneca, cf. Arnim, *RE* 2, 2179, no. 21.

[127] It will also render easier the justification of my disagreement with Gercke's text at three further points: see below, the notes 133; 135; 136.

divisions under A. (i. and ii.) are in accordance with the old-established principle of Roman augural doctrine: no sign concerns us which we have not observed.[128] Little comment is needed for class 1. and 2. 'Good' and 'bad' are the most natural distinctions in divination: Seneca spoke earlier (2, 33) of the *bonum* and *malum fulmen;* we know of the good or prosperous (even *laeta*) *auguria*, and their opposites (also *adversa*)[129] in the augural doctrine, and in extispicy nothing is so frequent as is the reference to the *laeta* or *tristia exta*.[130] The two alternatives of the *laeta* and the first two of the *adversa* are well defined and are also corresponding classes, lasting and passing signs, though what is desirable in the one case is not in the other. One might quote in support 2, 33: '. . . tertia (pars) ad propitiandos deos (pertinet), quos bono fulmine rogare oportet, malo deprecari: rogare ut promissa firment, deprecari ut remittant minas'. The term *caduca* is reminiscent of the *caduca auspicia* of the Romans (Paul. Fest. 64 M. = 56 L.) which have, however, a different, harmful, significance.[131] The words *evitabilia* and *inevitabilia* first appear in the Augustan period, but the cases to which they refer are undoubtedly parts of the Etruscan doctrine. The classes (*c*) and (*d*) can only be further forms of the *inevitabilia*. It will be enough to quote for class (*c*) Cicero, *div.* 2, 24 'haruspices . . . cum res tristissimas portendi dixerunt, addunt ad extremum omnia levius casura rebus divinis procuratis';[132] and for (*d*) the category mentioned above (p. 137) Sen. 2, 47 '. . . quorum minae differri possunt, averti tollique non possunt'. The categories 3. (with three alternatives)[133] and 4. cannot be questioned[134] since they appropriately complete the possible variations and also because some instances can be found for each of them.

A. ii.[135] has no subdivisions and is exemplified by the lightning which is merely a messenger of another to come. Gercke rightly quotes Pliny 2, 141: we have seen above (p. 144) that this category must have been borrowed from other disciplines which in fact could predict the coming of another sign. Here, however, it is not in the right place because it does not make a contrast to the categories of A. i.: Attalus apparently forced all that he knew into his scheme in one way or another.

The two categories of B.[136] can be ascribed to the influence of Roman divination

[128] Cf. e.g. Sen. 2, 32, 6; Pliny 28, 17; Thulin 1, 70; Wissowa, *Religion*[2] 531, 6.

[129] There are *adversa omina* (Tac. *Ann.* 4, 64; Suet. *Vit.* 8, 2), *auspicia* (Suet. *Otho* 8, 3; Val. Max. 5, 4, 2; *Vir. ill.* 64, 6), *auguria* (Acc. *trag.* 583 R.), *aves* (*Inc. trag.* 89 R.); but it is not a strictly technical term: *mala*, *dira*, *tristia*, *inimica* could equally have been used.

[130] Livy 31, 5, 7; Suet. *Caes.* 77; Pliny 11, 197; Tac. *hist.* 1, 27; 2, 4; Thulin 2, 48 f.

[131] It is possible that it corresponded with the passing sign of the scientists, cf. 2, 23, 2 'minore enim vi ad fulgurandum opus est quam ad fulminandum . . . verisimile est ignem excuti caducum et cito interiturum, qui non ex solida materia oritur'; 1, 15, 3.—For the *mansura* see Claud. *b. Gild.* 1, 28 'si mea mansuris meruerunt moenia nasci, /Iuppiter auguriis, si stant immota Sibyllae/carmina . . .'

[132] Cf. Thulin 1, 89.

[133] The third alternative exists only if p. 83, 6 the second *aut*, deleted by Gercke and Oltramare, is restored. An instance for the first may be the case of a king or *princeps* who is touched by lightning but survives: his descendants will achieve, according to the *libri reconditi*, eternal glory (Serv. Dan. *Aen.* 2, 649; cf. SHA. *Ant. Pius* 3, 5; perhaps also SHA. *Tac.* 15, 1; *Prob.* 24, 2). For the second, the destruction of the Columna rostrata by lightning in 172 B.C.: the *haruspices* declared that this sign meant a good turn, the extension of Rome's territory and the end of the war because the *rostra* had been spoils from the enemy (Livy 42, 20, 4; other possible instances in Thulin 1, 89 f.). The third seems to be identical with the second *manubia* of Iuppiter (2, 41, 1: see above, pp. 127 f.) and with the *fallacia fulmina* of Caecina (above, p. 149).

[134] This category is rejected by Thulin 1, 84; but the instance given by Seneca (' journey') belongs to the common stock of divination, for instance astrology, which vouches for its existence.

[135] This category is discussed in 51 ('revertor ad ea fulmina, quae significant quidem aliquid, sed quod ad nos non pertineat') but is not mentioned in the general division, 50, and ought to be supplemented as follows, p. 82, 15: 'ex fulminibus quaedam sunt, quae significant id quod ad nos pertinet ⟨aut id quod ad nos non pertinet,⟩ quaedam aut nihil significant, etc.'

[136] To be sure, as the text stands there is a single category not two: 'nihil significant fulmina aut id, cuius notitia nos effugit, ut illa quae in vastum mare sparguntur aut in desertas solitudines'. Here *ut illa* could only introduce some illustrative matter (just as Gercke's conjecture, *utique illa*; and Schultess' *futilia* is, though elegant, even less

and Greek philosophy respectively. According to the Roman augural doctrine (see above, p. 151) it was sufficient to declare that a sign was not observed for it to lose its force. The second category, exemplified by the lightning falling into the sea, mountains, and desert, is the outcome of philosophical debates.[137] The argument can be traced back to the times of Aristophanes, but it received new actuality through the Stoic defence of divination and the Epicurean attack on it.[138] Our category is nothing but the reply of the Stoics and their Etruscan pupils to such attacks by transforming them into the categories of *vana fulmina* and *muta exta*. And they were right in so far as the *haruspices* in fact declared many signs meaningless. But the version of Attalus conflicts with another which is perhaps the earlier one: according to the Fulgurale of Nigidius Figulus (see above, p. 138) if the sea is struck by lightning, the district in question is threatened by pirates.

There is nothing new to be learnt from Attalus directly. But he helps us to clear other evidence from suspicion. Since Posidonius, Etruscan divination had become a subject of interest. Etruscan writers contributed the raw material, the Romans treated it in their own fashion: Nigidius Figulus with a curious imagination, Cicero with some philosophical pretensions, Varro in an encyclopaedic spirit; and that is how Attalus came to 'mix it with Greek subtlety'. That subtlety may concern the form and interpretation but not the matter itself. If we can safely say that the Etruscans did not possess his system, we can also add that they did possess all its elements. Posidonius will have interpreted the Etruscan evidence with greater intelligence and imagination, but he certainly did not forge it either. What struck us constantly in Pliny's narrative as strange and suspicious must have been incorporated in the discipline by the Etruscans themselves under the influence of congenial doctrines which reached the West in constant flow from the East.

13. *Summary*. The Etruscans believed, as did many people of the ancient world, in a celestial god of overwhelming power, Tinia-Iuppiter, who was the source of the lightning as of almost everything. He was not, however, the exclusive god but just one member of a complex divine society placed in the sixteen regions of the heavens, and therefore it was often the gods of the particular regions who were responsible for the lightning coming from their direction. Iuppiter's pre-eminence was then expressed by the assumption that he was the ruler of the first, the most important, region. Under the influence of Platonic theology the system was much changed. A more radical change was caused by the intrusion of astral lore. It brought a rival both to the doctrine of Iuppiter's omnipotence and to that of the sixteen regions. Instead of distributing the gods in a shapeless and inscrutable heaven on the ground of a more or less vague mythology, the astrologers taught that the gods are manifest in the myriads of stars, above all in the planets and the cycle of the zodiac. For them Iuppiter was just the god of one planet, and his domain only the sixth of the seven planetary spheres. But even here the old all-powerful Iuppiter survived in a curious way. It was he who, by mixing the matter contributed by Saturn and Mars, the rulers of the neighbouring spheres, produced and

helpful): the lightning of the sea and the desert, however, does not escape our notice but is, according to Seneca and others, a category of its own, and that much discussed. It is therefore necessary to write *aut illa*.

[137] Cf. Bignone, *Mél. Boisacq* 108.

[138] Aristoph. *Nub.* 397 ff.; Lucr. 6, 396; 404; 421; Cic. *div.* 2, 45; further passages in Pease's commentary ad l.

hurled down the lightnings, or whose lightnings alone were creative and benevolent. A similar transformation was caused by the cycle of the zodiac. It was either the gods of the eleven or twelve signs who sent the lightnings but so that Iuppiter sent three of these, or else it was Iuppiter who sent them all though only partly alone, in other cases on advice of the twelve gods of the zodiac or of the numberless gods of the numberless stars.

Divination was always a strong feature of the religion of the Etruscans, who in this respect were from the 'beginning' nearer to the Babylonians and other races of the East than to the Greeks and Romans. But that beginning was elementary, as is shown by Roman historical records of portents and of explanations given by the *haruspices*. They possessed at an early date some *libri fulgurales* containing classifications and explanations; instruments comparable to a compass and a sundial; and fulgural calendars which explained the significance of the signs according to the day of the month. But this kind of divination was pushed temporarily into the background—though by no means abandoned—when Hellenistic astrology set out to conquer the world. The *haruspices* began to cast horoscopes and to advise their clients about all activities in the same way as did the *mathematici*, but of course they could not win the race. It is possible that the Etruscans were the first to apply the rules of Hellenistic astrology to the lightnings, but it is equally possible that some missing evidence would ascribe the initiative here too to the Chaldaeans.

The *haruspices* practised magic no doubt at an early date: there must have been always a strong urge to undo the warnings of the heavenly signs or at least to postpone their effect. We need not call prayers and sacrifices which the Romans performed on Etruscan advice magical actions. But the activities of 'Porsina' and others were less simple and betray a doctrine. Here again we are satisfied that the Etruscans were not the pioneers, although the Etruscan evidence at this point is centuries earlier than its Eastern counterpart.

Thus the Etruscan discipline contained ageless elements and recent accretions; elementary explanations together with speculations of great learning; doctrines which contradicted and superseded one another harmoniously recorded in the same books. The *haruspices* were both conservative and eager to learn, and were thus able to sustain their sacred discipline in a world of Eastern competition and destructive Greek philosophy. But however much they learnt, they remained in their core the same to the end: the servants of an exotic and obsolete creed.

STEFAN WEINSTOCK

A BRETON ADVENTURER IN NAPLES

THE purpose of this note is to discuss a late fourteenth-century tomb slab in the church of Santa Maria della Incoronata in Naples. In the course of collecting material for a study of the medieval tombs of Naples, which the Director of the British School at Rome and the present writer are preparing, this tomb, which is in many ways eccentric to the rest of the series, seemed of sufficient interest to merit treatment on its own.[1]

The slab (pl. XXI, 1), of Greek marble, now stands on end, together with six others, against the south wall of the west aisle.[2] When Cesare d'Engenio saw it in the early seventeenth century it was still *in situ* in the floor of the same aisle.[3] The figure is carved in low relief beneath a delicately traceried canopy with pinnacles and spiral columns, the whole set within a rectangular inscribed frame. The inscription is in black-letter (Gothic minuscule) and reads throughout from inside; although very worn in places, most of the letters can still be read without difficulty, and the others can be made out with the help of d'Engenio's version, made when the slab was presumably better preserved:[4]

(head, centre to right side) ✠ HIC. IACET. (right side, from head to foot) CORPUS. NOBILIS VIRI OLIVERII. BOUCHIER [LEON]ENSIS DIOCESIS DE BRICTANIA (foot, from right to left) QUI OBIIT ANNO D(OMI)NI (left side, from foot to head) M CCC OTTUAGESIMO SEPTIMO DIE VICESIMO SEPTIMO MENSIS OCTOBRIS XI IND(ICTIONIS) (head, from left to centre) AMEN

The figure, in full armour, with the feet resting upon a pair of dogs and the hands crossed below the waist, wears coat of mail reaching to the middle of the thigh and, visible over it, a heraldic surcoat; on the head bascinet and camail; plate on the upper arm; a laminated cop at the elbow, with short protruding wings; hinged plate on the lower arm; and laminated gauntlets. The legs are also in full plate: a slightly winged cop at the knee; plain greaves; sollerets and rowel spurs. The sword, with a wheel pommel and quillons that turn down at the end, hangs on a low, narrow, slightly diagonal sword belt. The dagger is of roundel type, and hangs upside down. The coat of arms on the surcoat, in shields in the corners above the canopy and on the front of the camail, is a cross engrailed between four halberds. There are no traces of colour.

In form and treatment this tomb is in the Neapolitan tradition, and typical of the monuments of the lesser nobility that once crowded the churches built by the first rulers of the Angevin dynasty. The knight in armour, recumbent beneath a canopy, with his

[1] I am much indebted to the Director for help and advice given during the preparation of this note.

[2] This chapel was added after the building of the church, founded by Joanna I in 1352. See E. Bernich, 'La Chiesa dell' Incoronata', *Napoli Nobilissima*, XIII, 1904, pp. 100–3.

[3] Cesare d'Engenio, *Napoli Sacra*, Naples, 1624 ed., p. 481.

[4] The letters within round brackets indicate abbreviations; those within square brackets are no longer clear. D'Engenio reads *Oenerii* for *Oliverii* and *Leoviensis* for *Leonensis* both manifestly impossible.

feet resting on twin dogs and his coat of arms in the upper corners, appears already on the flat slabs, with a linear design incised and filled with a black composition, that were the usual form of monument in the early years of the fourteenth century. A well preserved example of this type of tomb is the slab of Gualterius Carazulus Viola (*d.* 1321) from Santa Maria di Donnaregina, now in the Museo di San Martino. The canopy, which on the earliest slabs, as that of Brother Donatus (*d.* 1308) in San Lorenzo Maggiore, is a simple affair of two lines, the outer making the gable and the inner three cusps, has acquired crockets and columns with foliated capitals by 1324, when Gregorio Filomarino died and was buried in the chapel of his family in the Duomo. After 1324, only three incised slabs are known: the tomb of Costanza Dentice (*d.* 1334) in the Duomo; that of a member of the Sabran family in San Lorenzo Maggiore (*d.* 1346); and a fragment, undated but certainly late, from the slab of an Aquino, now in the Museo Nazionale di San Martino. The flat slabs were gradually superseded by those carved in relief and by tombs in the form of a sarcophagus.

The introduction of slabs carved in low relief coincides with the arrival of Tino da Camaino, the best known of the masters from the north who worked in Naples during the fourteenth century. Named in her will by Maria of Hungary (*d.* 1323), the widow of Charles the Second, to construct her tomb in Santa Maria di Donnaregina, Tino remained until his death in 1337, and built many other royal tombs in Neapolitan churches. The monumental tradition established during Tino's lifetime survived well into the fifteenth century. The type of elaborate canopied tomb that he and his successors brought from Tuscany and Rome and modified for their own purposes in Naples, was copied by lesser masters in such works as the two Aquino tombs in San Domenico Maggiore; it also influenced the style of humbler monuments. The low-relief slabs of the eighty years after Tino's death are a development of the earlier types described above, but elaborated and enriched by contact with an advanced sculptural tradition.

Olivier Bouchier's tomb, although in most respects a typical product of the Neapolitan workshops, has three unusual characteristics, none without parallel, but unique together in a Neapolitan context; the elaboration of the canopy, the portrayal of bascinet and camail, and the use of black-letter script.

The canopy, while not so elaborate as that on the tomb of the Abbess Cicalla Piscicella (*d.* 1438) in San Gregorio Armeno and on others of the fifteenth century, is among the most complicated in design and the most carefully worked that have survived. The closest resemblances are found in the slab next to it on the wall (Thomas Auguth(?) *d.* 1380), which probably comes from the same workshop, and in part of another slab in San Lorenzo Maggiore. These differ only in that the latter has no pinnacles, and that the columns of the former rest on the backs of lions.

Apart from the head, the armour represented is not unusual for Naples at this date. As far as can be seen (the shoulder is hidden by the camail), it is identical with that worn by the figure on the neighbouring slab already mentioned; and, but for trifling differences, with the effigy of Robert of Artois in San Lorenzo Maggiore (probably put up by Margaret of Durazzo after her return to Naples in 1399),[5] and with the anony-

[5] See L. de la Ville Sur-Yllon, 'L'Abside della Chiesa di San Lorenzo Maggiore', *Napoli Nobilissima*, IV, 1895, p. 38. The surcoat is fringed and the sword has a facetted, pear-shaped pommel with incised cross, a long grip and short, straight quillons.

mous knight in half relief on the north wall of the right transept of San Domenico Maggiore.[6] The effigy on the tomb of Johannotto de Protojudice of Salerno,[7] who died eighteen months before Olivier Bouchier, is in most respects identical, but mail can be seen on the arms between shoulder plate, elbow cop and gauntlets, and over the instep; the sword, with a much damaged pommel and short straight quillons, hangs from a belt under the surcoat.

The bascinet is rarely depicted on Neapolitan monuments. It can be seen on two badly worn late-fourteenth-century slabs carved in low relief in the pavement of Santa Restituta, where only a few words of the inscriptions remain and the coats of arms are also so worn as to be almost unrecognisable. One slab, on which a small boy is represented beside the armed figure, may be that of Giovanni Zurlo (*d.* 1381) and of his son Nicola Antonio (*d.* 1378).[8] These two are exceptions, outside the main Neapolitan tradition. In the early years of the fourteenth century, on both incised and low-relief slabs, warriors are represented wearing the full mail coif. This is customary until about 1330, and occurs alongside bareheaded figures during the next ten years, after which the effigies are almost invariably depicted bareheaded. The only extant exception prior to the three with bascinets is Ludovicus Dentice (*d.* 1348), who wears what appears to be a steel skull-cap, worn over a mail coif. An anonymous low-relief slab in San Lorenzo Maggiore, with a bareheaded figure in armour, shows his war helm and tilting helm in the upper corners. After the succession of helmetless warriors laid out in San Domenico Maggiore, the Incoronata bas-relief is disconcertingly reminiscent of a north-west European monumental brass.

Black-letter is very rarely found in Naples in monumental inscriptions of any kind. Throughout the fourteenth century and into the fifteenth, the normal script is a type of evolved Lombardic or Gothic majuscule. This is used on the slab adjacent to Bouchier's. Only a few examples of black-letter are to be found in Naples today; on Bouchier's tomb; on the tombs of Ludovico Aldemorisco (*d.* 1421) in San Lorenzo Maggiore and of Antonio Penna, now destroyed, in Santa Chiara,[9] both by Abbot Baboccio of Piperno; and on the low-relief slab of Abbess Cicalla Piscicella. When Roberto Aldemorisco made a copy of the inscriptions on his ancestor's tomb in the later years of the fifteenth century he said they were written *in gallicis litteris;*[10] and in the seventeenth century this script was called *lettere* or *carattere francese.*[11] It evidently had French associations for the Neapolitans of the late fourteenth and early fifteenth centuries. It is used for two French captions explaining the scene on the front of Ludovico Aldemorisco's sarcophagus, and for the French motto *pour loyance in anceiur*, on the tomb of Bufardo Cicinelli (*d.* 1455) in San Lorenzo Maggiore. Its first extant appearance in Naples is on

[6] The sword has an incipient-pear-shaped pommel and quillons as Bouchier's; the dagger a roundel pommel and flattened oval guard; mail appears over the instep of the sollerets.

[7] On the south wall of the right transept of San Domenico Maggiore.

[8] See *Napoli Sacra*, p. 18. D'Engenio mentions no other tomb in the Duomo in which a son is buried with his father.

[9] Fragments of the inscription are preserved in Santa Chiara, in addition to the sarcophagus and a recumbent effigy, traditionally supposed to be that of Penna, but which probably does not belong to the sarcophagus. The tomb was dismembered in 1627.

[10] *Napoli Sacra*, p. 109. These copies are no longer to be found in San Lorenzo Maggiore. Roberto did not state when he put them up, and we do not know when he lived or died. He was the last of the Aldemorisco family; his daughter Cecilia married Ugone Braida and had a daughter who was married in 1559 (C. de Lellis, *Discorsi delle Famiglie Nobili del Regno di Napoli*, I, 1654, p. 279).

[11] T. Valle, *La Città Nuova di Piperno*, Naples, 1646, pp. 300 and 304, describing the tomb of Antonio Penna.

the tomb of Olivier Bouchier, and it is peculiarly appropriate for a member of the Breton nobility. Later it appears to become one of several fashions, used, not as one might expect, by the Angevin party, but by supporters of the party of Ladislaus and Joanna II; Antonio Penna was Ladislaus' secretary and Ludovico Aldemorisco one of his admirals.

Curiously close parallels for several of the unusual characteristics of Bouchier's tomb are to be found on a tomb, of much inferior workmanship, that is preserved in Rhodes, and commemorates a knight of the Order of St. John (pl. XXI, 2).[12] Like Bouchier, who came from the diocese of St.-Pol-de-Leon, he was a Breton, Pierre de la Pymoraye, of the diocese of Rennes (*d.* 1402). The tomb lacks the canopy and dogs of its Neapolitan fellow, and the coats of arms are in a separate panel above the head. But the figure wears armour closely resembling that of Bouchier,[13] including bascinet and camail, and the inscription, written in black-letter, contains with slight variations, the unusual wording found on Bouchier's slab: . . . *nobilis armiger petrus de la pymoraye redover. dioces. in britania.* . . .[14] Papal records habitually mentioned the diocese of a clerk, for administrative convenience and to facilitate identification. Civilians were also distinguished in this way in indults of Clement VII in 1386 and 1387;[15] and a list of witnesses, from all walks of life, who testified about the life and miracles of Duke Charles of Brittany in 1372 mentions in addition the parish of origin.[16] This practice was not confined to documents; Jean le Fèvre describes a messenger who came to Margaret of Brittany from Bernandon de la Salle as *Jehan Carelles du chastel de Peyrouse ou dyocese de Rodés*.[17] In the absence of any other explanation it is reasonable to presume that the motive which operated in other cases applied also to those of Olivier Bouchier and Pierre de la Pymoraye: in an age when many were far from home and unfamiliar names were easily confused, to mention the diocese, a well known unit, was the best way of identifying an individual.

The last unusual feature of Olivier Bouchier's tomb is that it commemorates in Naples a noble from the northern shores of Europe. Like Pierre de la Pymoraye, Bouchier was among those who pursued a career of arms in France or, when opportunities became scarce, sought fortune elsewhere. Few details can be added to those given on his tombstone. Breton medieval documents mention many Bouchiers, and only one of the Bouchier, Boucher, Boschet, and Bochier found serving the Dukes of Brittany can safely be attributed to the same family as our Bouchier: Raoul du Boschet, whose seal in 1420 bears an engrailed cross.[18] Olivier Bouchier may have belonged to a cadet branch of this

[12] From the pavement of the Suleimoniè mosque; it is now in the Museum. G. Jacobi, *Guida dello spedale dei cavalieri e del museo archeologico di Rodi* (Ministero della Educazione Nazionale: le Guide dei Musei Italiani), Rome, 1932, pp. 35 and 37, fig. 18.

[13] Mail can be seen under the plates on the thighs, but not below the surcoat.

[14] The full inscription is as follows: (head, from left to right) + HIC : IACET : SUB : TUMULO : (right side, from head to foot) NOBILIS : ARMIGER : PETRUS : DE : LA : PYMORAYE : REDOVER : DIOCES : IN : BRITANIA : QUI : OBIIT : XXI : DIE : (foot, from right to left) MENSIS : (left side, from foot to head) JANUARII : ANNO : INCARNACIONIS : D(OMI)NI : M : CCCC : CUIUS : ANIMA : REQUIESCAT : IN : PACE : AMEN :

[15] Archivio Segreto Vaticano, Reg. Vat. 298, Clementis VII Antipapa ann. IX. Among many other examples: Robert de Florigniac and Agnes his wife of the diocese of Sens are permitted to have a portable altar, 26 June 1386 (fol. 9v); a list of *domicelli* from the dioceses of Vannes and St.-Pol-de-Léon who are granted the permission to have a confessor, 2 April 1387 (fol. 14v).

[16] Arch. Seg. Vat., Collectoriae 434, Processus de vita et miraculis Caroli Ducis Brittaniae 1372. The witnesses are mentioned in a form almost identical with that found on Bouchier's tombstone: *nobilis vir dominus Erardus de Leonio miles Leonensis diocesis* (fol. 82).

[17] *Journal de Jean le Fèvre, Évêque de Chartres*, ed. H. Morainville, Paris, 1887, p. 201; 25 Nov. 1385.

[18] Lobineau, *Histoire de Bretagne*, Paris, 1707, II plates of seals, no. ccxv.

family, whose arms were *sable, a cross engrailed argent*.[19] The writer has not been able to find any other example of this coat of arms with the addition of the halberds, but the halberd was a fairly common charge in Breton heraldry.[20]

A considerable number of Breton knights were fighting in Italy towards the end of the fourteenth century. Introduced in the first instance by Gregory XI in 1375, others came in the various Angevin expeditions; they were usually employed by the Avignonese Pope or Angevin dynasty against the forces of the Roman Popes and the Durazzo family, but not invariably;[21] and in the intervals they accepted other engagements.[22] It is more likely that Bouchier was fighting for the Angevin than for the Durazzo party, since he died and was buried in Naples at a time when the city had been in the power of the former for some months. He is not mentioned among the mercenaries employed by Clement VII in 1376 and 1381, or by Clement and Marie of Brittany in 1386–7, and the date of his arrival in Italy is therefore a matter for speculation. There are three possibilities. He could have come shortly before his death, either with the forces of Otto of Brunswick, which were in Apulia early in 1387,[23] and arrived at Naples on the first of July,[24] or with Louis II himself, who arrived on July 6.[25] Silard Pansard and Bertrand Guillamet, captains of Bretons in Apulia, were paid by the Pope in March, and the latter again in May.[26] Bouchier cannot have been in the Company of Bernandon de la Salle, which was in Umbria during the summer of 1387.[27] He could have been a member of the army of Louis I, which crossed the Alps in 1382, marched down through Italy, and took part in the Apulian campaign until Louis' death at Bari on September 20th, when many of the captains fled to Venice.[28] Not all Louis' forces followed the example of Bernandon de la Salle and returned to France. Some remained in Italy and accepted whatever employment offered.[29] There were Bretons with Raimondello Orsini outside Nocera in 1385,[30] and among the troops of Tommaso Sanseverino in 1385 and 1386.[31]

It is possible, though not very likely, that Olivier Bouchier had been in Italy since 1375; that he was one of the army led by Sylvestre Bude, Bernandon de la Salle and

[19] Pol de Courcy, who evidently had not seen the Incoronata tomb, erroneously attributes our Bouchier to the Breton family of Bocher, lords of Kermeidy in the parish of Cléder, who bore *three bends with a fess over all and a canton checky of nine pieces*. (*L'Armorial de Lèon en 1400*, republished as *L'Armorial de l'Évêché de Saint-Pol-de-Léon* by Pol de Courcy in 1846; ed. of M. de Reffuge, Nantes, 1863, p. 26).

[20] An alternative possibility has been suggested by the Richmond Herald: the Breton branch was connected with the English family, who bore the cross engrailed, but usually at this time between four water-bougets; a craftsman unfamiliar with the heraldry of northern Europe might have mistaken the water-bougets for halberds, which they resemble when seen from the side.

[21] Bernandon de la Salle fought for Urban VI for a short time in 1378, and for Joanna I in 1381; P. Durrieu, *Les Gascons en Italie*, Auch, 1885, pp. 128 and 136–7.

[22] Bretons were among the forces besieging Tarvisio in the summer of 1380 (*Annales Bonincontrii* in Muratori, *Rerum Italicarum Scriptores*, vol. XXI, 38); and there were others in the band of Giovanni d'Azzo degli Ubaldini in the Appenines in 1381 (E. Ricotti, *Storia delle Compagnie di Ventura in Italia*, Turin, 1845, II, 182).

[23] Otto was appointed Captain General of the Angevin forces in October 1386 (*Journal de Jean le Fèvre*, p. 320); Dietrich of Niem says that he went to the kingdom of Sicily while Urban VI was at Lucca, after Dec. 1386 (*Theoderici de Nyem de Scismate Libri Tres*, ed. G. Erler, Leipsig, 1890, p. 111).

[24] *Diurnali detti del Duca di Monteleone* (ed. N. Faraglia, *Società Napoletana di Storia Patria*, Naples, 1895, p. 32).

[25] *Ibid.*, p. 33.

[26] Archivio Segreto Vaticano, Instrumenta Miscellanea 3242, Rotuli receptorum et expensorum a domino Petro Episcopo Magalensi Thesaurario Clementis Papae VII, no. 9, for March 1387, *pro guerra*, and no. 10, for May 1387, *ibid.*,

[27] P. Durrieu, *op. cit.*, p. 159.

[28] *Diario d'Anonimo Fiorentino*, in *Documenti di Storia Italiana VI, Cronache dei Secoli XIII e XIV*, p. 454.

[29] *Annales Bonicontrii*, pp. 45–6.

[30] *Theoderici de Nyem*, p. 98.

[31] *Chronicon Siculum Incerti Autoris*, ed. J. de Blasiis, *Società Napoletana di Storia Patria*, Naples, 1887, pp. 61 and 65.

Jean de Malestroit,[32] *qui reputabantur et reputantur mali homines*,[33] which fought in Romagna and the Marches and, after sacking Cesena early in February, 1377, entered Umbria. Here they spent the next year, living as best they could[34] and avoiding battle with Sir John Hawkwood, in the pay of the Florentines. During the papal election at Rome in April, 1378, they were summoned to the city and employed, first by Urban VI, and later by the Cardinals at Anagni. On their way from Viterbo to Anagni on July 16 they defeated a body of Romans at Ponte Lamentano, but less than a year later were themselves severely defeated at Marino, near Rome, by Alberigo da Barbiano and his Company of Saint George, then in the service of Urban VI. The company probably broke up after this. Bernandon de la Salle fought some actions round Rome after his release, and later went to Naples,[35] while small bands of Bretons remained and kept up desultory resistance to Urban VI from the cities that they occupied round the Lake of Bolsena, until the coming of Louis I drew many of them south with his standard.

However much Italian campaigning Olivier Bouchier had seen, whether he had fought across the Appenines and through Campania and Apulia or was but newly landed from France, his death probably took place, not in a pitched battle, but during the skirmishing and rapine in the streets of Naples that drove many of the inhabitants to take refuge in Sicily, Capua and Gaeta during the summer and early autumn of 1387.[36] It may be that he was killed when the castle at Posillipo was captured in the last days of October;[37] Neapolitans, German and Breton stipendaries were among the victorious forces.[38] In any case his career and end were typical of many others that left no record of any kind; and his tombstone is a valuable indication of the quality of Neapolitan craftsmanship in the later fourteenth century, a period in the history of Neapolitan Art that has suffered long and undeserved neglect.

S. F. BRIDGES

[32] P. Durrieu, *op. cit.*, p. 126 n.

[33] *Thomae de Acerno Episcopi Luceriensis de Creatione Urbani VI et Creatione Domini Gebennsis in Antipapam*, Muratori, *R.I.SS.*, III, part II, 718.

[34] See especially the account of their visit to Terni, in *Diario d'Anonimo Fiorentino*, p. 338.

[35] P. Durrieu, *op. cit.*, pp. 135, 137.

[36] *Theoderici de Nyem*, p. 115.

[37] The two authorities that mention this attack differ as to the day on which it took place: the *Diurnali* says the 22 October (p. 34); the *Chron. Sic.* (p. 71) 31 October. The day of Bouchier's death may provide the correct date.

[38] *Chron. Sic.*, p. 21.

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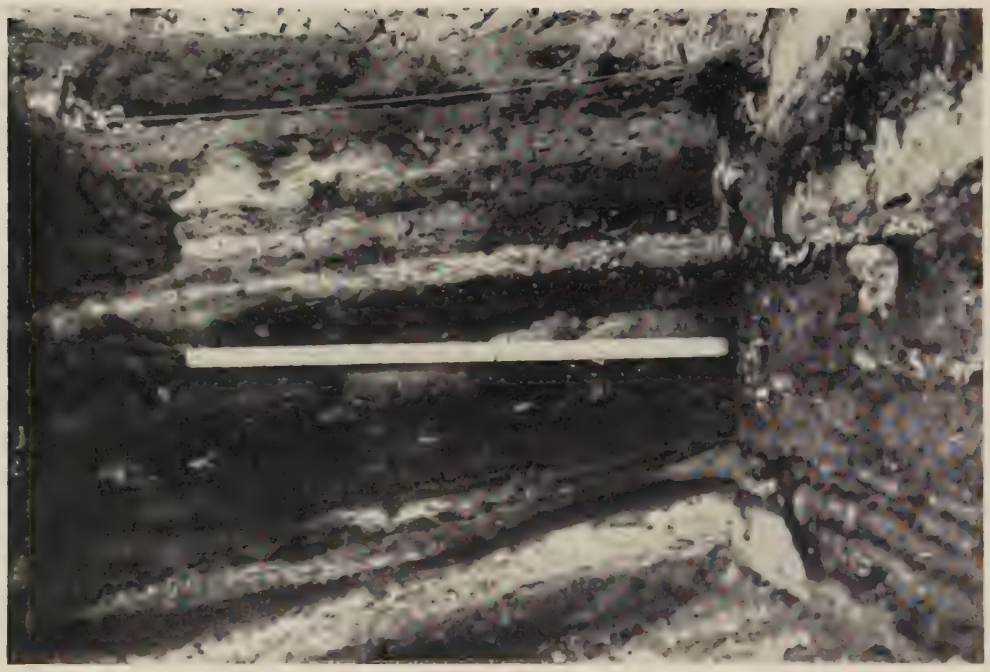
(*Valletta Museum*)

1. LEKYTHOS FROM TAL LIEDNA, TOMB 3 (p. 7)

(*Valletta Museum*)

2. OINOCHOË FROM TAL LIEDNA, TOMB 3 (p. 7)



1. Manaccora, Site II: Stratum II, between the Two Main Sterile Levels (p. 29)

2. Manaccora, The Annexe (Site III): Postholes in the Deepest Levels of Trench A2 (p. 36)

(*Photos: E. Baumgartel*)

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Mugs by the Lampas Painter

1. In Karlsruhe Museum; Ht. 125 mm. pp. 39–42
2–4. In Reading Museum; Ht. 125 mm. (pp. 39–42)

1

2

3

1–3. Mug by the Lampas Painter, Oxford 1934.17; Ht. 90 mm. (pp. 39–42)

4

4. South Italian Mug, Oxford 439; Ht. 133 mm. (p. 42)

1–2 (*above*). Mug by the Lampas Painter, in Truro Museum; Ht. 95 mm. (pp. 39–42)
3–4 (*below*). South Italian Mug, Oxford 438; Ht. 128 mm. (p. 42)

1. General View of the Site, from the West; in the Background, Breviglieri Village-centre

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3. Remains of the Ammonium, from the North

Ras el-Haddagia (pp. 51–56)

(*Photos: Antiquities Dept., Tripolitania*)

(*M. H. Ballance*)

1 (*above*). Medeina: Domic Baths, West of Frigidarium (p. 50)

(*Archaeological Dept., Trinchinopoly*)

2 (*right*). Ras el-Haddagia: Remains of the Ammonium, from the East (pp. 51–56)

PLATE IX

(*Antiquities Dept., Tripolitania*)

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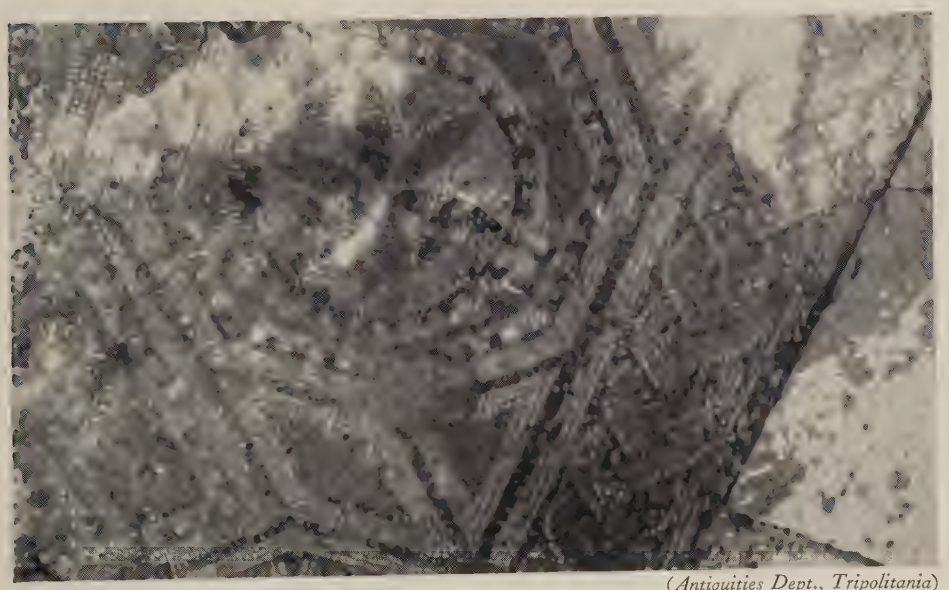
(*Antiquities Dept., Tripolitania*)

2. Ain Scersciara: Interior of the Large Kiln (p. 59)

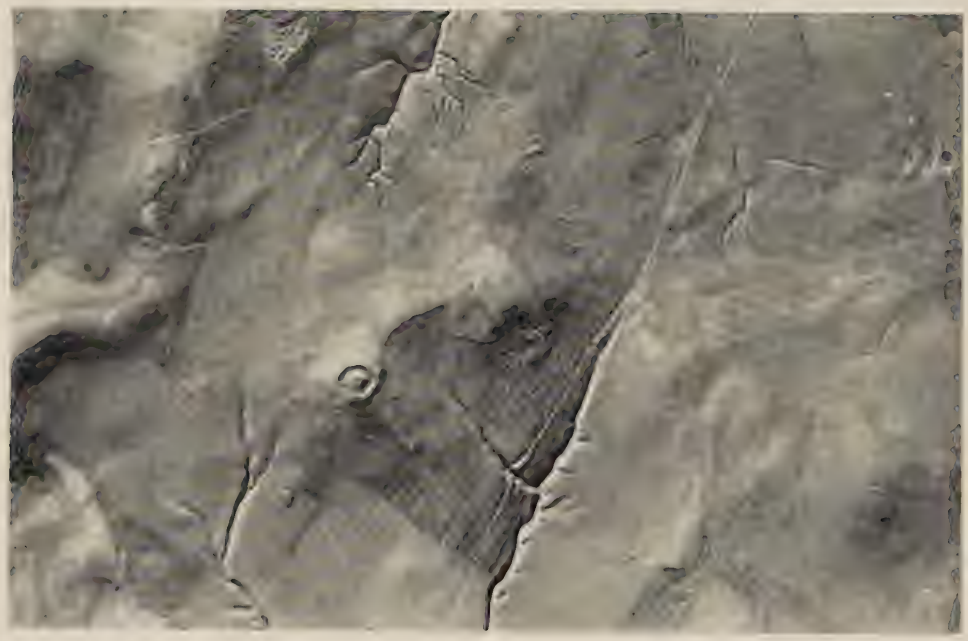
(*Antiquities Dept., Tripolitania*)

1. El-Khadra: Base of Small Mausoleum (p. 44)



(*Antiquities Dept., Tripolitania*)

2. Ain Scersciara: Detail of Mosaic Floor in Portico (p. 57)



1. Fortified Farm at Ras Gassciut, 3 km. West of Tarhuna (p. 76, no. 17)

2. Fortified Farm North-east of Sidi el-Garib, 3 km. North of Tarhuna (p. 76, no. 20)

(*Photo : Crown copyright; no.* 2 *is reproduced by courtesy also of the Royal Geographical Society*)

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(*Antiquities Dept., Tripolitania*)

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(*Photos: M. H. Ballance*)

PLATE XIV

(*M. H. Ballance*)

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(*M. H. Ballance*)

(*M. H. Ballance*)

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(*Photos M. H. Baillie*)

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(*Photos M. H. Ballance*)

PLATE XVII

(*M. H. Ballance*)

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(*M. H. Ballance*)

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(*Photos: M. H. Ballance*)

PLATE XIX

(*British Museum*)

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(*J. B. Ward Perkins*)

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